

THE
SPIDERS OF DORSET,

WITH AN APPENDIX CONTAINING SHORT
DESCRIPTIONS OF THOSE BRITISH SPECIES
NOT YET FOUND IN DORSETSHIRE.

BY THE
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FROM THE
"PROCEEDINGS OF THE DORSET NATURAL HISTORY
AND ANTIQUARIAN FIELD CLUB,"

EDITED BY
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TO
JOHN BLACKWALL, ESQ., F.L.S.,

OF

HENDRE HOUSE, NEAR LLANRWST, NORTH WALES,

THIS WORK ON

THE SPIDERS OF DORSET,

IS

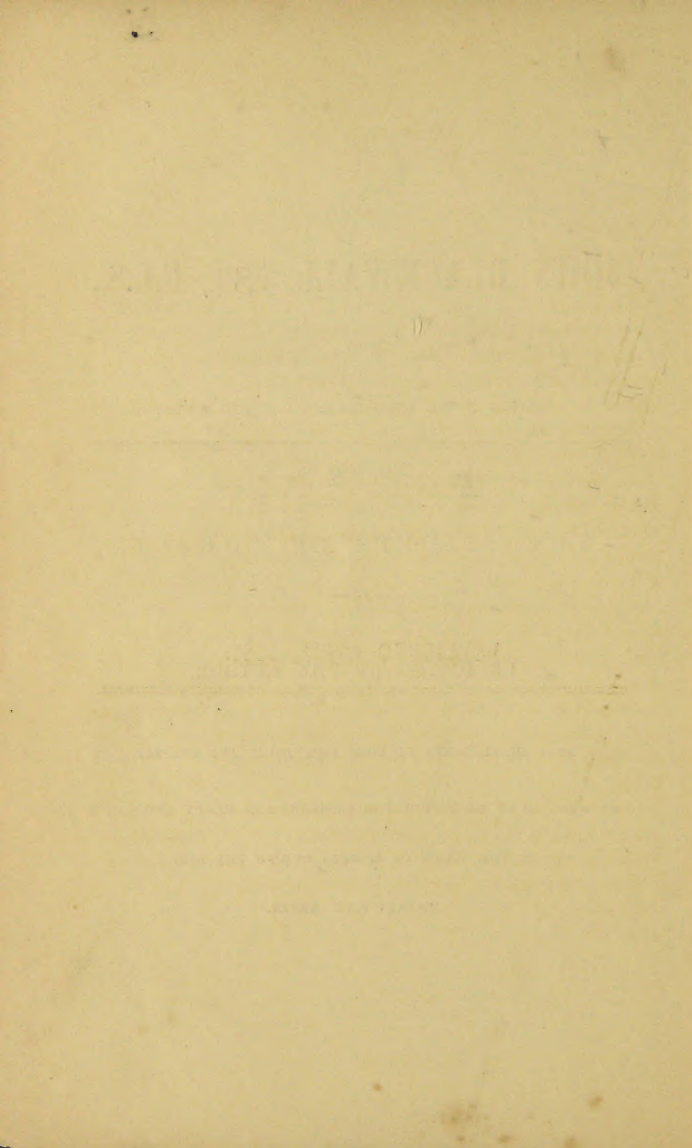
DEDICATED BY THE AUTHOR,

AS A SMALL TOKEN OF LONG FRIENDSHIP AND RESPECT,

AS WELL AS OF GRATITUDE FOR CONSTANT AND READY ASSISTANCE

IN THE STUDY OF SPIDERS DURING THE LAST

TWENTY-FIVE YEARS.



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BY
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PREFACE.

The first idea of the present work embraced merely a list of the Spiders of Dorsetshire, compiled from notes and observations during the last twenty years, and including simply the time and locality of capture. On second thoughts such a bare list appeared to be rather too formal and uninteresting, and not likely to be very useful; it therefore gradually expanded until, before the task had been proceeded with very far, it was determined to give some of the leading characters of each spider, so that the list might form a kind of handbook from which a collector or student of spiders might be able to identify most of those met with in the county. As the work has gone on it has been found advisable to make the descriptions, especially where the species are nearly allied to each other, rather fuller, and perhaps a little more formal. This modification in the plan of the work will account for the earlier descriptions being often less full, and less precise than the later ones. A further modification was determined upon when it was ascertained that the spiders found in Dorsetshire included upwards of two-thirds of those as yet known to be British. It was thought then that by the addition of a not very extensive appendix, those spiders not yet found in Dorsetshire, but many of which will doubtless some day be met with there, might be included in a supplemental list, with a short diagnosis of each species. The present monograph, therefore, will include all the known British spiders; and will, it is hoped, materially assist future collectors in the determination of any new additions they may make to our County List; the more especially as, at present, there is no work in which all our known British spiders are included. The large folio volume of Mr. Blackwall, published in 1861-4, records 304 species; the present work already includes

510 ; and fresh additions are constantly being made to this total by myself and others.

The primary object of the work, however, is to give an account of *Dorset* spiders. Now local lists are of chief value, when the locality has some well-defined natural boundaries, and has been fairly well searched. The former can scarcely be predicated of the County of Dorset ; it is not divided from the neighbouring counties by any very well defined natural limits, nor can its *whole* area be said to have been well searched in respect to spiders ; and yet, if I mistake not, the present list will be found in future to represent very fairly the spider-population of the County ; because those parts of it which have been best worked, include (in respect to soil) its three principal districts—the *Chalk* and *Limestone*, the *Heath*, and the *Clay*. It is in the first two of these districts that we find the most peculiar entomological fauna ; and very many of the spiders found in them are also more or less peculiar and local.

As a matter of fact by far the greater part of the known spiders of Dorset have been found in the parish of Bloxworth, and its immediate neighbourhood ; the rest (with a very few exceptions) have been obtained in the Isle of Portland.

The parish of Bloxworth forms a long strip of land about $3\frac{1}{2}$ miles in length by about $1\frac{1}{2}$ in breadth, running lengthwise due north and south. The southern extremity of this tract of land (taking it roughly in three, about equal, portions) consists of sandy and gravelly heath, with a considerable mixture of marsh and bog land. The central portion is a clay loam, with a large amount of wood and coppice land ; and the northern division is loam upon chalk. These three districts are similarly continued on each side of Bloxworth, east and west, for many miles. The Isle of Portland, being of the limestone formation, produces, as a general rule (and making allowance for its sea-board), the insects and spiders peculiar to the chalk districts.

Out of the 510 species of spiders at present known to inhabit Great Britain and Ireland 358 have been found in Dorsetshire. Of the remaining 152, nine only have been recorded in Ireland,

and several others are, at present, doubtful species. The very large proportion of British spiders found in Dorsetshire is, no doubt, partly due to the three distinct varieties of soil mentioned above, and of which the Bloxworth district is a typical example; in a great measure it is due, perhaps, to Dorsetshire having been more thoroughly worked than any other, equally limited, portion of the British Islands. To this cause is, doubtless, due the large number of species—about 84—which have, as yet, only been found in this county. Many of them will scarcely fail to turn up in the adjoining counties, and perhaps also in more distant ones, when these come in for a fair share of working in this branch of Natural History.

The Island of Portland boasts, at present, about 17 species peculiar to itself—so far at least as Great Britain is concerned—and, of these, *three* have not as yet been found anywhere else. Out of those above-mentioned as peculiar to Dorsetshire, about 47 are yet unrecorded on the continent; and out of the whole 510 British spiders about 128 still remain unrecorded excepting in Great Britain.

Examples of fourteen out of the fifteen Families of spiders represented in Britain are found in Dorsetshire; and these fourteen Families comprise 74 genera, as against 83 represented in Britain.

It should be remarked here that the following descriptions by no means exhaust the characters of the different spiders. For the sake of brevity only those characters are usually given, which have been considered sufficient fairly to describe the spider, and, where necessary, to distinguish it from its nearest congeners. The descriptions of new species are, of course, given with greater detail than those of spiders already known.

With regard to the synonymic references which precede the descriptions, the quotation of all those that are at present ascertained would have been, of course, out of the question. Many species have from fifteen to twenty, and even more; and the insertion of all these would have too greatly increased the bulk of the monograph, besides being out of place in a work of this

nature. I have, therefore, as a rule, merely inserted, in each instance, a reference to the author to whom the recognized name of the spider is due. In some instances, however, when that author is an old one, and his works not likely to be got at readily, then a reference is also made to the more modern author by whom the spider has been either described, or figured, or both.

Besides the works of Mr. Blackwall and others, so frequently referred to in the following pages, those who desire to enter minutely into questions of synonyms, will find the "Remarks on Synonyms of European Spiders," by Dr. T Thorell, of Upsala, Sweden (in one vol., published in 1869), a work not only of prime authority on points of synonymic reference, but also on numberless other interesting and important points, relating to the specific distinctions of many of our nearly allied species.



INTRODUCTION.

What is a Spider?

The existing state of popular knowledge, in respect to spiders, is, probably, pretty correctly indicated in an answer made to me by a friend, that "he knew of *four kinds only*—the *Red Spider*; the *Harvest Spider*; the *Garden Spider*; and the *House Spider*." This answer showed a very common misconception, not only as to the number of species of spiders, but also as to what is really a *Spider*; for, unluckily, the first two of the little creatures mentioned are neither of them spiders, *sensu stricto*; on the contrary, they belong to two collateral ORDERS; the first to the Order *Acaridea* (which includes the cheese-mites and numberless other microscopic species), the second to the Order *Phalangidea*. Without pretending therefore to enter very minutely into structure, or anatomical details, either external or internal, many of which would be quite out of place here, it yet seems advisable to precede the descriptions of our numerous Dorsetshire spiders by a short account of what *is* a spider, and what a spider *is*; so that those creatures which are not really spiders, although popularly included under that name, may be dismissed, for the present at least, from our minds.

Prejudice against Spiders. Origin of the Name Spider.

A great deal of ignorance and misconception undoubtedly prevails about spiders; as well as very much unreasoning dislike of them. The dislike probably arises, in a great degree, from this ignorance, and also, in some measure, from a certain sinister look that they seem, in many minds, to possess. It has been suggested to me, too, that their very name has a sinister sound and appearance. So far as this may be true, I suppose it arises from those letters in the name which give it a kind of hissing, or spiteful sound; just as the same letters appear to do in the word *wasp*. But, however that may be, the derivation of the word *spider*

ought to banish at once from every mind any sinister idea. We may, I think, dismiss altogether the fanciful interpretation by which the name *spider* was once derived from "spy-door" (spydor), in allusion to a, supposed general, habit of spiders lying on the look-out in their webs spun in the angles of a doorway. Its real derivation is, without a doubt, obtained from the habit of spinning silken lines; an unvarying character of the whole ORDER to which spiders belong. Hence the Swedish name *Spindlar* or "the Spinner." The name is also essentially the same in German, and other Teutonic languages. From *spindlar* we get *spider* at once, by the simple and natural elision of the *n* and *l*.

With regard to the sinister look of a spider, it is, I think, only through ignorance and prejudice that spiders could be viewed in that light. Where is the object which does not become beautiful when seen through the medium of intelligent enquiry? Is this too philosophic an idea for our every-day world? If so then, at least, let me say that among spiders we find not only elegance of form, and many curious and complex structures (some wonderfully adapted to their mode of life, others still unexplained), but great beauty, both of actual colouring and its distribution; forming patterns of great variety, and striking contrasts of colour. The descriptions of many even of our British spiders will exemplify this; while among exotic species there are numerous examples of richness and brilliancy of colouring, equal to almost anything found in the insect world.

The carnivorous habits of spiders are repulsive to some minds; and hence comes another source of dislike; but with what amount of sense or reason? A correspondent in the *Dorset County Chronicle*, some little time since, included spiders in a sweeping clause as, by common consent, disgusting creatures, chiefly owing to their habit of preying upon others; and spoke of the study of spiders as though it were unworthy the time or attention of a rational being. I know not how wide-spread these opinions may be; but, at any rate, it is scarcely consistent in

mutton-and-beef-eating creatures to abuse the poor spiders for doing not only what they themselves do, but also for doing a good turn by lessening the numbers of some of the greatest, among the minor torments of human life—gnats, flies, and mosquitos. The same correspondent recommended as a worthier study, and a higher theme for the pen, “the little busy bee, and the pretty, innocent singing birds.” I presume that he, or she, must have been quite ignorant of such episodes in bee-life as the ruthless massacre of the male bees, when their services are no longer required; and certainly the joyous song-thrush could never have been seen in the act of immolating snails on the sacrificial stone, or tugging the unwilling worm from its mother earth, with the nibbling process of dismemberment which invariably follows!

Well! let us hope that the busy bee and the singing birds have, since then, been really studied, and with a less prejudiced mind, and if so we may be sure the crafty and (it may even be admitted) blood-thirsty spider will become an object of less disgust—may be, of some rational interest.

Difference between Spiders and Insects.

A spider then is a creature that spins—a *Spinner*; not like a silkworm, through its mouth, but by means of special external organs—*spinners*—placed at the hinder extremity of the abdomen (pl. i., figs. 2gg, 6, 10, 11d). A spider differs from all the insect tribes in not undergoing any metamorphosis; it is a *spider* from first to last, and merely undergoes several moultings or castings of the skin as it goes on, after its first exclusion from the egg, to maturity. The body is divided into *two*, instead of (as in insects) three, visibly distinct parts. These parts are in insects—the caput, thorax, and abdomen; but in the spider the caput and thorax, with its several segments (called the *cephalo-thorax*), are soldered together. The grooves or indentations denoting the once separate portions are, however, almost invariably more or less visible; and the abdomen is joined to the cephalo-thorax by a short pedicle, through which the various organs of the former are connected with those of the

thoracic portion. The eyes, too, are all simple; thus differing remarkably from the compound eyes of the Insecta; and the legs (*six* in the insect tribes) are always *eight* in the spider.

Differences Between Spiders and Other Arachnids.

The different characters above detailed are easily observed, and will furnish a ready answer to the question, "Spider or insect?" But as the various Orders of Arachnids—of which the spiders constitute one Order only—share, with modifications, in all those characters, one or two of the leading distinctions must be mentioned, by which a spider may be known either from the *Acaridea*—Mites—or the *Phalangidea*—Harvest-men—or from a Pseudo-scorpion—*Scorpionidea*—which are the only three Orders of Arachnids represented in Britain, besides spiders—*Araneidea*, *i.e.*, if we except the *Pycnogonidea*, marine animals, whose position is still questionable.

A spider can be distinguished at once from one of the *Acaridea* (or Mite-tribes), by the latter possessing a body, which consists, at first sight, of *one portion only*; the outer skin being continuous, and, in many cases, not showing, by even a suture, or groove, any division between the cephalo-thorax and abdomen.

From the *Phalangidea* (or Harvest-men), a spider may be recognised by the same general appearance in the former, as that presented by an Acarid; but although the body of a Harvest-man appears at first sight to consist of *one* portion only, the cephalo-thorax is, usually, distinctly defined by a transverse indentation, or groove; the abdomen is covered by a series of coriaceous, or somewhat horny, transverse folds, or plates; the eyes are (in all European species) *two only*, placed, one on each side of a tubercular eminence, near the fore extremity of the cephalo-thorax; and the legs are generally very long, and of extraordinary slenderness; the terminal joint being sub-divided into numerous minute articulations.

The *Pseudo-scorpiones* (or Cheliferæ), forming a sub-order of the *Scorpionidea*, are a small group of minute, but curious

Arachnids, resembling little scorpions without tails. They are found under logs of wood or stones, as well as among moss and rubbish, and frequently in company with spiders, from which their two, long, crab-like, forcipated claws (or palpi) in front of the legs, will serve to distinguish them at a glance.

Of the two remaining, terrestrial, Arachnidous Orders, *Solpugidea* and *Thelyphonidea*, we have no British representatives; they need not, therefore, be distinguished here from the spiders.

So far then as to *what is a spider*. We will now proceed to detail, rather more minutely, the different parts and organs in order to give some idea of *what a spider is*; and first of the

EXTERNAL STRUCTURE.

The Cephalo-thorax.

This consists of the head (*caput*) and thorax, united (pl. i., fig. 4); its integument is always, more or less, hard and corneous, and is marked with two oblique indentations towards its fore part, indicating a large, somewhat wedge-shaped portion, at the anterior extremity (pl. i., figs. 3*b* and 4*b*); this wedge-shaped portion is the *caput*; the distinctness, with which it is marked off from the rest (or *thorax*), is exceedingly variable, and its fore extremity is always, more or less broadly truncated, or rounded off. The thorax is marked with three or four grooves or indentations on each side (pl. i., figs. 4*c, d, e, f*, and 3*c, d, e, f*), varying in depth and completeness, but almost always traceable, and converging from near the margin to a point near the centre, where there is either a small linear furrow, a simple dilated depression, or sometimes a deep, curved, transverse indentation; this is called the *thoracic indentation* (pl. i., fig. 4*g*); the transverse, converging, lateral indentations indicate the four thoracic segments on each side. These segments and the caput are now soldered together; but, without a doubt, at one period of the spider's genealogical history all of them were separate from each other, and each was articulated to the thorax proper, the position of which is marked by the present thoracic indentation.

Besides these indentations, the cephalo-thorax is often marked

with either striæ, punctures, or rugulosities, and is variously coloured; it is often smooth and glabrous, but, frequently, also clothed with spines, bristles, hairs, or downy pubescence, of different colours; forming a distinctive pattern, which usually follows the converging direction of the various indentations.

In numbers of *male* spiders, of various families and genera, the caput (especially the ocular region) is liable to excessive, and often quite eccentric development. This is carried to, perhaps, its greatest extent, among our indigenous spiders, in the genus *Walckenaëra*, where the eyes are thus thrust up (as it were) on more or less considerable, and variously shaped elevations and eminences (pl. iv., figs. 3 and 4). The females present little or no trace of this excessive development. If it be true that no natural development can exist, which is not of some benefit to the possessor, and which has not been produced by natural selection, these developments, confined thus to the male sex, and of no conceivable utility, are a puzzle to the rigid disciples of Darwin. My own opinion * has long been that such developments (together with many others, peculiar to the male sex) are simply the results of the greater vital force or energy of the male organization; and are only kept in check by the hindrance and positive evil that they may bring with them to their possessors in the struggle for life. Of course, the operation of natural selection will come in, through the advantage given to individuals in which the vital force is the most powerful; and will thus indirectly tend to increase those developments which are, primarily, the result of that force.

The Eyes

Are placed at the fore part of the caput, sometimes in front of it, at other times on the upper surface; often partly in front and partly above (see various figures in pls. i.-v.). They are simple, immovable, six or eight in number in all the known British species, though a few exotics possess no more than two or four.

* In a correspondence, several years since, upon this point, Mr. Darwin did not agree with my views upon it. Very lately, however, I have had the satisfaction of seeing those views stated and upheld by Mr. Alfred Russell Wallace, in his recent most interesting work, "*Tropical Nature*."

Their disposition, though uniformly symmetrical, is exceedingly varied; they are very generally placed in pairs, and almost always present some modification of two transverse rows of four eyes each; and their size, both actual and relative, differs greatly. The portion of the caput occupied by the eyes is called the *ocular area* (pl. i., fig. 5a', a''); on some eccentric forms of this area (see above). The interval between the anterior row of eyes and the lower margin of the caput is called the *clypeus* (pl. i., fig. 5b'); and to the whole area, from the lower margin to the posterior eyes, is given the name of the *facial space* (pl. i., fig. 5c').

Spiders are in some measure compensated for inability to move the eyes, by having their visual axis variously directed, owing partly to the greater or less convexity of the surface of the ocular area, and partly to the presence of tubercles, upon or around which the eyes are seated: thus the eight-eyed spiders are frequently able to look eight different ways at once.

The eyes of spiders vary in shape as well as in colour; some are pearly white, others (in the same individual) are dark grey, and even black; while among the *Salticidae* eyes of most brilliant hues may be seen, showing the colours of the amethyst, emerald, opal, and other precious stones. Some (the greater part) are round, others are oval, and some of a sub-triangular, or irregular form. Mons. Eugène Simon (of Paris) calls the pearly white eyes "*les yeux nocturnes*," and the dark-coloured ones "*les yeux diurnes*;" laying great stress upon the systematic value of the difference of function supposed to exist between these two kinds of eyes; but this value may well be questioned.

In certain spiders some of the eyes have a flattened and abortive appearance, and are probably, in such cases, of little, or perhaps no use for visual purposes. Examples have occasionally been met with in which one, or more, of the eyes is wanting. A very curious instance of this kind is at present before me, in an adult male example of *Tegenaria Derhamii*, Scop., received from Belfast. No outward trace of an eye is visible in this specimen, but I can discern a faint appearance of the four central ones

beneath the horny cuticle. It is quite possible, however, that these may have sufficed for vision, though, probably, in a very imperfect degree.

The Legs.

These are articulated, four on each side, beneath the outer margin of the cephalo-thorax, to an either round, oval, oblong, or heart-shaped, corneous plate, called the *Sternum* (pl. i., fig. 2*d*) (in this figure the legs are truncated at the first joint).

The legs consist each of seven joints of different lengths (a very few exotic species possessing eight, owing to the subdivision of the tarsus or terminal joint). The following names are given to these joints in the descriptions in this volume (see pl. i., fig. 1, where, on one of the legs, the joints are numbered):—i., the *exinguinal*; ii., *coxal*; iii., *femoral*; iv., *genual*; v., *tibial*; vi., *metatarsal*; vii., *tarsal*.

The legs vary a good deal in their size and length, both absolutely and relatively; and the tarsi always terminate with either two or three curved claws, generally toothed or pectinated (pl. i., figs. 8*a* and 13*b*); usually the pectinations are confined to the two superior claws, but occasionally the inferior one also is toothed. The legs are clothed in various ways—with hairs, bristles, and spines (pl. i., figs. 1 and 9); in some spiders plumose hairs may be seen.

In some groups a longitudinal series of small, closely-set, curved, spino-like bristles, may be found on the metatarsi of the fourth pair of legs (fig. 9, *a*). This is called a *Calamistrum*, and is used for the purpose of carding or combing out from a special spinning organ (to be described presently) a peculiar flocculus of adhesive silk, which is disposed about the spider's snare, the better to entrap its prey. We are indebted to our countryman, the veteran Araneologist, Mr. John Blackwall, for the discovery of this portion of a spider's structure, as well as for our knowledge of its mode of employment and use. Beneath the tarsi (and sometimes the metatarsi) of many spiders is found a more or less compact clothing, often quite a pad or cushion, of close-set hairs, generally of a papilli form nature (pl. i., figs. 12,

12A); this is called a *scopula*, and is of use in enabling the spider to ascend *polished* surfaces, as glass, &c. And frequently there is, close beneath the tarsal claws, a compact tuft of hairs, the hairs often of a somewhat club-shape, or squamose nature—to this is given the name of *claw-tuft* (pl. i., fig. 13a); doubtless it is of use in enabling the spider to traverse uneven surfaces with the greater speed, and is most marked in spiders possessing two terminal claws only, if not entirely confined to them.

The Falces.

Immediately below the fore-part of the cephalo-thorax are the *Falces* (pl. i., figs. 3a, and 5a,a). These are two in number, and each consists of a strong basal joint articulated to the caput, either vertically, or on an inclined plane, or horizontally; moving accordingly, either up and down, or sideways. At the extremity of each is a strong, curved, pointed fang, articulated so as to close down, either in a line along the under side of the falx (pl. ii., fig. 2a), or along its inner side (pl. i., fig. 5b,c). Most commonly the fang is met by a longer or shorter row of teeth placed along the inner side of the falx (pl. i., fig. 5d,d), sometimes two rows of teeth are present, and occasionally there is an extra strong tooth in front of each falx. The falces are thus rendered most formidable weapons, more especially as each contains, inside, a hollow charged with a poisonous fluid, which is poured into the wound made by the fang, through a minute orifice near its extremity.

The falces are used not only for seizing and killing the spider's prey, but also for comminuting and compressing it so as to squeeze out the juices into the throat, which is situated immediately behind them.

By some physiologists the falces are considered to be the homologues of the antennæ of insects, abnormally developed and modified for the performance of a special function. The usual truncated form of the fore part of the caput is also considered to have arisen from the disappearance, through "Natural selection, of the fore part of the insect-caput, carrying away with it the two large compound insect-eyes, and leaving only those which now, in

the spider, are thought to represent the simple ocelli of the insect. For my own part, although fully persuaded of the extensive agency (among others) of "Natural selection," and of the truth of "Evolution" I cannot at present see sufficient grounds for the above hypothesis as to their effect in modifying what are now the falces and caput of spiders.

The Maxillæ.

If a spider be laid on its back, two elongated pieces will be seen at the fore extremity, just behind the falces (pl. i., fig. 2, *a, a*, and pl. ii., fig. 2. *c, c'*) these are called *maxillæ*, or jaws, because they assist in the compression of the spider's prey, and in squeezing out its juices into the throat (or œsophagal tube). The *maxillæ* form the greater part of the posterior boundary of the mouth; they are variously formed, of great diversity in size, and constitute, in fact, the basal, or supporting joints, of

The Palpi.

These are two in number, and stretch forwards immediately in front of the first pair of legs. Pl. i., fig. 1*a*, (male), and fig. 2 *o-h*. (female). Occasionally (in the Family *Theraphosides*) the palpi are used, in the female sex, as legs, but most commonly only as feelers. Instead of seven joints, like the legs, the palpi have but six, including the basal joint or *maxilla*. They are very varied in length and strength, and in the form of the joints (pl. i., figs. 1*a*, 1*b*, 1*c*, 1*d*, 1*e*, 1*f*, 1*g*, 1*h*, 1*i*, 1*j*, 1*k*, 1*l*, 1*m*, 1*n*, 1*o*, 1*p*, 1*q*, 1*r*, 1*s*, 1*t*, 1*u*, 1*v*, 1*w*, 1*x*, 1*y*, 1*z*, 1*aa*, 1*ab*, 1*ac*, 1*ad*, 1*ae*, 1*af*, 1*ag*, 1*ah*, 1*ai*, 1*aj*, 1*ak*, 1*al*, 1*am*, 1*an*, 1*ao*, 1*ap*, 1*aq*, 1*ar*, 1*as*, 1*at*, 1*au*, 1*av*, 1*aw*, 1*ax*, 1*ay*, 1*az*, 1*ba*, 1*bb*, 1*bc*, 1*bd*, 1*be*, 1*bf*, 1*bg*, 1*bh*, 1*bi*, 1*bj*, 1*bk*, 1*bl*, 1*bm*, 1*bn*, 1*bo*, 1*bp*, 1*bq*, 1*br*, 1*bs*, 1*bt*, 1*bu*, 1*bv*, 1*bw*, 1*bx*, 1*by*, 1*bz*, 1*ca*, 1*cb*, 1*cc*, 1*cd*, 1*ce*, 1*cf*, 1*cg*, 1*ch*, 1*ci*, 1*cj*, 1*ck*, 1*cl*, 1*cm*, 1*cn*, 1*co*, 1*cp*, 1*cq*, 1*cr*, 1*cs*, 1*ct*, 1*cu*, 1*cv*, 1*cw*, 1*cx*, 1*cy*, 1*cz*, 1*da*, 1*db*, 1*dc*, 1*dd*, 1*de*, 1*df*, 1*dg*, 1*dh*, 1*di*, 1*dj*, 1*dk*, 1*dl*, 1*dm*, 1*dn*, 1*do*, 1*dp*, 1*dq*, 1*dr*, 1*ds*, 1*dt*, 1*du*, 1*dv*, 1*dw*, 1*dx*, 1*dy*, 1*dz*, 1*ea*, 1*eb*, 1*ec*, 1*ed*, 1*ee*, 1*ef*, 1*eg*, 1*eh*, 1*ei*, 1*ej*, 1*ek*, 1*el*, 1*em*, 1*en*, 1*eo*, 1*ep*, 1*eq*, 1*er*, 1*es*, 1*et*, 1*eu*, 1*ev*, 1*ew*, 1*ex*, 1*ey*, 1*ez*, 1*fa*, 1*fb*, 1*fc*, 1*fd*, 1*fe*, 1*ff*, 1*fg*, 1*fh*, 1*fi*, 1*fj*, 1*fk*, 1*fl*, 1*fm*, 1*fn*, 1*fo*, 1*fp*, 1*fq*, 1*fr*, 1*fs*, 1*ft*, 1*fu*, 1*fv*, 1*fw*, 1*fx*, 1*fy*, 1*fz*, 1*ga*, 1*gb*, 1*gc*, 1*gd*, 1*ge*, 1*gf*, 1*gg*, 1*gh*, 1*gi*, 1*gj*, 1*gk*, 1*gl*, 1*gm*, 1*gn*, 1*go*, 1*gp*, 1*gq*, 1*gr*, 1*gs*, 1*gt*, 1*gu*, 1*gv*, 1*gw*, 1*gx*, 1*gy*, 1*gz*, 1*ha*, 1*hb*, 1*hc*, 1*hd*, 1*he*, 1*hf*, 1*hg*, 1*hh*, 1*hi*, 1*hj*, 1*hk*, 1*hl*, 1*hm*, 1*hn*, 1*ho*, 1*hp*, 1*hq*, 1*hr*, 1*hs*, 1*ht*, 1*hu*, 1*hv*, 1*hw*, 1*hx*, 1*hy*, 1*hz*, 1*ia*, 1*ib*, 1*ic*, 1*id*, 1*ie*, 1*if*, 1*ig*, 1*ih*, 1*ii*, 1*ij*, 1*ik*, 1*il*, 1*im*, 1*in*, 1*io*, 1*ip*, 1*iq*, 1*ir*, 1*is*, 1*it*, 1*iu*, 1*iv*, 1*iw*, 1*ix*, 1*iy*, 1*iz*, 1*ja*, 1*jb*, 1*jc*, 1*jd*, 1*je*, 1*jf*, 1*jj*, 1*jh*, 1*ji*, 1*jj*, 1*jk*, 1*jl*, 1*jm*, 1*jn*, 1*jo*, 1*jp*, 1*jq*, 1*jr*, 1*js*, 1*jt*, 1*ju*, 1*jv*, 1*jw*, 1*jx*, 1*jy*, 1*jz*, 1*ka*, 1*kb*, 1*kc*, 1*kd*, 1*ke*, 1*kf*, 1*kg*, 1*kh*, 1*ki*, 1*kj*, 1*kk*, 1*kl*, 1*km*, 1*kn*, 1*ko*, 1*kp*, 1*kq*, 1*kr*, 1*ks*, 1*kt*, 1*ku*, 1*kv*, 1*kw*, 1*kx*, 1*ky*, 1*kz*, 1*la*, 1*lb*, 1*lc*, 1*ld*, 1*le*, 1*lf*, 1*lg*, 1*lh*, 1*li*, 1*lj*, 1*lk*, 1*ll*, 1*lm*, 1*ln*, 1*lo*, 1*lp*, 1*lq*, 1*lr*, 1*ls*, 1*lt*, 1*lu*, 1*lv*, 1*lw*, 1*lx*, 1*ly*, 1*lz*, 1*ma*, 1*mb*, 1*mc*, 1*md*, 1*me*, 1*mf*, 1*mg*, 1*mh*, 1*mi*, 1*mj*, 1*mk*, 1*ml*, 1*mm*, 1*mn*, 1*mo*, 1*mp*, 1*mq*, 1*mr*, 1*ms*, 1*mt*, 1*mu*, 1*mv*, 1*mw*, 1*mx*, 1*my*, 1*mz*, 1*na*, 1*nb*, 1*nc*, 1*nd*, 1*ne*, 1*nf*, 1*ng*, 1*nh*, 1*ni*, 1*nj*, 1*nk*, 1*nl*, 1*nm*, 1*nn*, 1*no*, 1*np*, 1*nq*, 1*nr*, 1*ns*, 1*nt*, 1*nu*, 1*nv*, 1*nw*, 1*nx*, 1*ny*, 1*nz*, 1*oa*, 1*ob*, 1*oc*, 1*od*, 1*oe*, 1*of*, 1*og*, 1*oh*, 1*oi*, 1*oj*, 1*ok*, 1*ol*, 1*om*, 1*on*, 1*oo*, 1*op*, 1*oq*, 1*or*, 1*os*, 1*ot*, 1*ou*, 1*ov*, 1*ow*, 1*ox*, 1*oy*, 1*oz*, 1*pa*, 1*pb*, 1*pc*, 1*pd*, 1*pe*, 1*pf*, 1*pg*, 1*ph*, 1*pi*, 1*pj*, 1*pk*, 1*pl*, 1*pm*, 1*pn*, 1*po*, 1*pp*, 1*pq*, 1*pr*, 1*ps*, 1*pt*, 1*pu*, 1*pv*, 1*pw*, 1*px*, 1*py*, 1*pz*, 1*qa*, 1*qb*, 1*qc*, 1*qd*, 1*qe*, 1*qf*, 1*qg*, 1*qh*, 1*qi*, 1*qj*, 1*qk*, 1*ql*, 1*qm*, 1*qn*, 1*qo*, 1*qp*, 1*qq*, 1*qr*, 1*qs*, 1*qt*, 1*qu*, 1*qv*, 1*qw*, 1*qx*, 1*qy*, 1*qz*, 1*ra*, 1*rb*, 1*rc*, 1*rd*, 1*re*, 1*rf*, 1*rg*, 1*rh*, 1*ri*, 1*rj*, 1*rk*, 1*rl*, 1*rm*, 1*rn*, 1*ro*, 1*rp*, 1*rq*, 1*rr*, 1*rs*, 1*rt*, 1*ru*, 1*rv*, 1*rw*, 1*rx*, 1*ry*, 1*rz*, 1*sa*, 1*sb*, 1*sc*, 1*sd*, 1*se*, 1*sf*, 1*sg*, 1*sh*, 1*si*, 1*sj*, 1*sk*, 1*sl*, 1*sm*, 1*sn*, 1*so*, 1*sp*, 1*sq*, 1*sr*, 1*ss*, 1*st*, 1*su*, 1*sv*, 1*sw*, 1*sx*, 1*sy*, 1*sz*, 1*ta*, 1*tb*, 1*tc*, 1*td*, 1*te*, 1*tf*, 1*tg*, 1*th*, 1*ti*, 1*tj*, 1*tk*, 1*tl*, 1*tm*, 1*tn*, 1*to*, 1*tp*, 1*tq*, 1*tr*, 1*ts*, 1*tt*, 1*tu*, 1*tv*, 1*tw*, 1*tx*, 1*ty*, 1*tz*, 1*ua*, 1*ub*, 1*uc*, 1*ud*, 1*ue*, 1*uf*, 1*ug*, 1*uh*, 1*ui*, 1*uj*, 1*uk*, 1*ul*, 1*um*, 1*un*, 1*uo*, 1*up*, 1*uq*, 1*ur*, 1*us*, 1*ut*, 1*uu*, 1*uv*, 1*uw*, 1*ux*, 1*uy*, 1*uz*, 1*va*, 1*vb*, 1*vc*, 1*vd*, 1*ve*, 1*vf*, 1*vg*, 1*vh*, 1*vi*, 1*vj*, 1*vk*, 1*vl*, 1*vm*, 1*vn*, 1*vo*, 1*vp*, 1*vq*, 1*vr*, 1*vs*, 1*vt*, 1*vu*, 1*vv*, 1*vw*, 1*vx*, 1*vy*, 1*vz*, 1*wa*, 1*wb*, 1*wc*, 1*wd*, 1*we*, 1*wf*, 1*wg*, 1*wh*, 1*wi*, 1*wj*, 1*wk*, 1*wl*, 1*wm*, 1*wn*, 1*wo*, 1*wp*, 1*wq*, 1*wr*, 1*ws*, 1*wt*, 1*wu*, 1*wv*, 1*ww*, 1*wx*, 1*wy*, 1*wz*, 1*xa*, 1*xb*, 1*xc*, 1*xd*, 1*xe*, 1*xf*, 1*xg*, 1*xh*, 1*xi*, 1*xj*, 1*xk*, 1*xl*, 1*xm*, 1*xn*, 1*xo*, 1*xp*, 1*xq*, 1*xr*, 1*xs*, 1*xt*, 1*xu*, 1*xv*, 1*xw*, 1*xx*, 1*xy*, 1*xz*, 1*ya*, 1*yb*, 1*yc*, 1*yd*, 1*ye*, 1*yf*, 1*yg*, 1*yh*, 1*yi*, 1*yj*, 1*yk*, 1*yl*, 1*ym*, 1*yn*, 1*yo*, 1*yp*, 1*yq*, 1*yr*, 1*ys*, 1*yt*, 1*yu*, 1*yv*, 1*yw*, 1*yx*, 1*yy*, 1*yz*, 1*za*, 1*zb*, 1*zc*, 1*zd*, 1*ze*, 1*zf*, 1*zg*, 1*zh*, 1*zi*, 1*zj*, 1*zk*, 1*zl*, 1*zm*, 1*zn*, 1*zo*, 1*zp*, 1*zq*, 1*zr*, 1*zs*, 1*zt*, 1*zu*, 1*zv*, 1*zw*, 1*zx*, 1*zy*, 1*zz*, 1*aa*, 1*ab*, 1*ac*, 1*ad*, 1*ae*, 1*af*, 1*ag*, 1*ah*, 1*ai*, 1*aj*, 1*ak*, 1*al*, 1*am*, 1*an*, 1*ao*, 1*ap*, 1*aq*, 1*ar*, 1*as*, 1*at*, 1*au*, 1*av*, 1*aw*, 1*ax*, 1*ay*, 1*az*, 1*ba*, 1*bb*, 1*bc*, 1*bd*, 1*be*, 1*bf*, 1*bg*, 1*bh*, 1*bi*, 1*bj*, 1*bk*, 1*bl*, 1*bm*, 1*bn*, 1*bo*, 1*bp*, 1*bq*, 1*br*, 1*bs*, 1*bt*, 1*bu*, 1*bv*, 1*bw*, 1*bx*, 1*by*, 1*bz*, 1*ca*, 1*cb*, 1*cc*, 1*cd*, 1*ce*, 1*cf*, 1*cg*, 1*ch*, 1*ci*, 1*cj*, 1*ck*, 1*cl*, 1*cm*, 1*cn*, 1*co*, 1*cp*, 1*cq*, 1*cr*, 1*cs*, 1*ct*, 1*cu*, 1*cv*, 1*cw*, 1*cx*, 1*cy*, 1*cz*, 1*da*, 1*db*, 1*dc*, 1*dd*, 1*de*, 1*df*, 1*dg*, 1*dh*, 1*di*, 1*dj*, 1*dk*, 1*dl*, 1*dm*, 1*dn*, 1*do*, 1*dp*, 1*dq*, 1*dr*, 1*ds*, 1*dt*, 1*du*, 1*dv*, 1*dw*, 1*dx*, 1*dy*, 1*dz*, 1*ea*, 1*eb*, 1*ec*, 1*ed*, 1*ee*, 1*ef*, 1*eg*, 1*eh*, 1*ei*, 1*ej*, 1*ek*, 1*el*, 1*em*, 1*en*, 1*eo*, 1*ep*, 1*eq*, 1*er*, 1*es*, 1*et*, 1*eu*, 1*ev*, 1*ew*, 1*ex*, 1*ey*, 1*ez*, 1*fa*, 1*fb*, 1*fc*, 1*fd*, 1*fe*, 1*ff*, 1*fg*, 1*fh*, 1*fi*, 1*fj*, 1*fk*, 1*fl*, 1*fm*, 1*fn*, 1*fo*, 1*fp*, 1*fq*, 1*fr*, 1*fs*, 1*ft*, 1*fu*, 1*fv*, 1*fw*, 1*fx*, 1*fy*, 1*fz*, 1*ga*, 1*gb*, 1*gc*, 1*gd*, 1*ge*, 1*gf*, 1*gg*, 1*gh*, 1*gi*, 1*gj*, 1*gk*, 1*gl*, 1*gm*, 1*gn*, 1*go*, 1*gp*, 1*gq*, 1*gr*, 1*gs*, 1*gt*, 1*gu*, 1*gv*, 1*gw*, 1*gx*, 1*gy*, 1*gz*, 1*ha*, 1*hb*, 1*hc*, 1*hd*, 1*he*, 1*hf*, 1*hg*, 1*hh*, 1*hi*, 1*hj*, 1*hk*, 1*hl*, 1*hm*, 1*hn*, 1*ho*, 1*hp*, 1*hq*, 1*hr*, 1*hs*, 1*ht*, 1*hu*, 1*hv*, 1*hw*, 1*hx*, 1*hy*, 1*hz*, 1*ia*, 1*ib*, 1*ic*, 1*id*, 1*ie*, 1*if*, 1*ig*, 1*ih*, 1*ii*, 1*ij*, 1*ik*, 1*il*, 1*im*, 1*in*, 1*io*, 1*ip*, 1*iq*, 1*ir*, 1*is*, 1*it*, 1*iu*, 1*iv*, 1*iw*, 1*ix*, 1*iy*, 1*iz*, 1*ja*, 1*jb*, 1*jc*, 1*jd*, 1*je*, 1*jf*, 1*jj*, 1*jh*, 1*ji*, 1*jj*, 1*jk*, 1*jl*, 1*jm*, 1*jn*, 1*jo*, 1*jp*, 1*jq*, 1*jr*, 1*js*, 1*jt*, 1*ju*, 1*jv*, 1*jw*, 1*jx*, 1*jy*, 1*jz*, 1*ka*, 1*kb*, 1*kc*, 1*kd*, 1*ke*, 1*kf*, 1*kg*, 1*kh*, 1*ki*, 1*kj*, 1*kk*, 1*kl*, 1*km*, 1*kn*, 1*ko*, 1*kp*, 1*kq*, 1*kr*, 1*ks*, 1*kt*, 1*ku*, 1*kv*, 1*kw*, 1*kx*, 1*ky*, 1*kz*, 1*la*, 1*lb*, 1*lc*, 1*ld*, 1*le*, 1*lf*, 1*lg*, 1*lh*, 1*li*, 1*lj*, 1*lk*, 1*ll*, 1*lm*, 1*ln*, 1*lo*, 1*lp*, 1*lq*, 1*lr*, 1*ls*, 1*lt*, 1*lu*, 1*lv*, 1*lw*, 1*lx*, 1*ly*, 1*lz*, 1*ma*, 1*mb*, 1*mc*, 1*md*, 1*me*, 1*mf*, 1*mg*, 1*mh*, 1*mi*, 1*mj*, 1*mk*, 1*ml*, 1*mm*, 1*mn*, 1*mo*, 1*mp*, 1*mq*, 1*mr*, 1*ms*, 1*mt*, 1*mu*, 1*mv*, 1*mw*, 1*mx*, 1*my*, 1*mz*, 1*na*, 1*nb*, 1*nc*, 1*nd*, 1*ne*, 1*nf*, 1*ng*, 1*nh*, 1*ni*, 1*nj*, 1*nk*, 1*nl*, 1*nm*, 1*nn*, 1*no*, 1*np*, 1*nq*, 1*nr*, 1*ns*, 1*nt*, 1*nu*, 1*nv*, 1*nw*, 1*nx*, 1*ny*, 1*nz*, 1*oa*, 1*ob*, 1*oc*, 1*od*, 1*oe*, 1*of*, 1*og*, 1*oh*, 1*oi*, 1*oj*, 1*ok*, 1*ol*, 1*om*, 1*on*, 1*oo*, 1*op*, 1*oq*, 1*or*, 1*os*, 1*ot*, 1*ou*, 1*ov*, 1*ow*, 1*ox*, 1*oy*, 1*oz*, 1*pa*, 1*pb*, 1*pc*, 1*pd*, 1*pe*, 1*pf*, 1*pg*, 1*ph*, 1*pi*, 1*pj*, 1*pk*, 1*pl*, 1*pm*, 1*pn*, 1*po*, 1*pp*, 1*pq*, 1*pr*, 1*ps*, 1*pt*, 1*pu*, 1*pv*, 1*pw*, 1*px*, 1*py*, 1*pz*, 1*qa*, 1*qb*, 1*qc*, 1*qd*, 1*qe*, 1*qf*, 1*qg*, 1*qh*, 1*qi*, 1*qj*, 1*qk*, 1*ql*, 1*qm*, 1*qn*, 1*qo*, 1*qp*, 1*qq*, 1*qr*, 1*qs*, 1*qt*, 1*qu*, 1*qv*, 1*qw*, 1*qx*, 1*qy*, 1*qz*, 1*ra*, 1*rb*, 1*rc*, 1*rd*, 1*re*, 1*rf*, 1*rg*, 1*rh*, 1*ri*, 1*rj*, 1*rk*, 1*rl*, 1*rm*, 1*rn*, 1*ro*, 1*rp*, 1*rq*, 1*rr*, 1*rs*, 1*rt*, 1*ru*, 1*rv*, 1*rw*, 1*rx*, 1*ry*, 1*rz*, 1*sa*, 1*sb*, 1*sc*, 1*sd*, 1*se*, 1*sf*, 1*sg*, 1*sh*, 1*si*, 1*sj*, 1*sk*, 1*sl*, 1*sm*, 1*sn*, 1*so*, 1*sp*, 1*sq*, 1*sr*, 1*ss*, 1*st*, 1*su*, 1*sv*, 1*sw*, 1*sx*, 1*sy*, 1*sz*, 1*ta*, 1*tb*, 1*tc*, 1*td*, 1*te*, 1*tf*, 1*tg*, 1*th*, 1*ti*, 1*tj*, 1*tk*, 1*tl*, 1*tm*, 1*tn*, 1*to*, 1*tp*, 1*tq*, 1*tr*, 1*ts*, 1*tt*, 1*tu*, 1*tv*, 1*tw*, 1*tx*, 1*ty*, 1*tz*, 1*ua*, 1*ub*, 1*uc*, 1*ud*, 1*ue*, 1*uf*, 1*ug*, 1*uh*, 1*ui*, 1*uj*, 1*uk*, 1*ul*, 1*um*, 1*un*, 1*uo*, 1*up*, 1*uq*, 1*ur*, 1*us*, 1*ut*, 1*uu*, 1*uv*, 1*uw*, 1*ux*, 1*uy*, 1*uz*, 1*va*, 1*vb*, 1*vc*, 1*vd*, 1*ve*, 1*vf*, 1*vg*, 1*vh*, 1*vi*, 1*vj*, 1*vk*, 1*vl*, 1*vm*, 1*vn*, 1*vo*, 1*vp*, 1*vq*, 1*vr*, 1*vs*, 1*vt*, 1*vu*, 1*vv*, 1*vw*, 1*vx*, 1*vy*, 1*vz*, 1*wa*, 1*wb*, 1*wc*, 1*wd*, 1*we*, 1*wf*, 1*wg*, 1*wh*, 1*wi*, 1*wj*, 1*wk*, 1*wl*, 1*wm*, 1*wn*, 1*wo*, 1*wp*, 1*wq*, 1*wr*, 1*ws*, 1*wt*, 1*wu*, 1*wv*, 1*ww*, 1*wx*, 1*wy*, 1*wz*, 1*xa*, 1*xb*, 1*xc*, 1*xd*, 1*xe*, 1*xf*, 1*xg*, 1*xh*, 1*xi*, 1*xj*, 1*xk*, 1*xl*, 1*xm*, 1*xn*, 1*xo*, 1*xp*, 1*xq*, 1*xr*, 1*xs*, 1*xt*, 1*xu*, 1*xv*, 1*xw*, 1*xx*, 1*xy*, 1*xz*, 1*ya*, 1*yb*, 1*yc*, 1*yd*, 1*ye*, 1*yf*, 1*yg*, 1*yh*, 1*yi*, 1*yj*, 1*yk*, 1*yl*, 1*ym*, 1*yn*, 1*yo*, 1*yp*, 1*yq*, 1*yr*, 1*ys*, 1*yt*, 1*yu*, 1*yv*, 1*yw*, 1*yx*, 1*yy*, 1*yz*, 1*za*, 1*zb*, 1*zc*, 1*zd*, 1*ze*, 1*zf*, 1*zg*, 1*zh*, 1*zi*, 1*zj*, 1*zk*, 1*zl*, 1*zm*, 1*zn*, 1*zo*, 1*zp*, 1*zq*, 1*zr*, 1*zs*, 1*zt*, 1*zu*, 1*zv*, 1*zw*, 1*zx*, 1*zy*, 1*zz*

In the male spider we observe a remarkable difference in the extreme (or *digital*) joint of each palpus; this, instead of being

simple, and no larger than the next joint, if so large, is of a tumid form, and when the spider becomes adult, *i.e.*, at its last moult, it develops into a more or less oval, sometimes very large, and generally concave, somewhat spoon-like joint; in the hollow, or to the under side of this joint, is fixed a curious structure, consisting of a corneous bulb, spines, processes, and lobes; sometimes their form is very simple, as in the *Theraphosides*, *Dysderides*, and some others (pl. ii., figs. 1c., 2f., and 6a., and pl. i., fig. 15c); but at other times it is very complex (pl. i., fig. 14c), and notably so in many species of *Linyphia*, as well as in some other genera. To this structure is given the name of *palpal organs*; they are, in fact, the external instruments by which the fecundation of the female spider is effected. The male spider (in a manner somewhat analogous to the deposition of the milt by the male fish) drops the fecundating fluid out of the secreting organs (which are situated beneath the fore part of the abdomen) upon a line of its web, or possibly on a leaf, or on some other substance. It then immediately imbibes or draws the fluid into the bulbous portion of the palpal organs by means of an appropriate duct, whose orifice is situated at the end of one of these prominent processes; through this it is again, subsequently, injected into the female organs, which are furnished with receptacles—Spermathecae—for its retention for some days, or perhaps weeks, until required for use. In some instances the male spider probably imbibes the fecundating fluid into the palpal organs directly from the secreting vessels, but this has not yet been actually observed.

The variety in the form of the spines and processes, and in the structure generally of the palpal organs, is apparently without limit; and thence we obtain one of the most useful, and unfailing characters for the distinction of species. Other joints of the palpi also frequently present differences, and apparent eccentricities of structure. This is chiefly noticeable in respect to the *radial* joint, which is often furnished with variously formed spines and projections, or, as they are usually called, *apophyses* (pl. i., fig. 15b). These are also most important for the

determination of spiders, never being exactly alike in any two males of different species.

The development of the palpal organs is the sure criterion of maturity.

The Sternum.

This has already been mentioned as the plate to which the legs are articulated (pl. i., fig. 2*d*). It is usually flat or sub-convex; its shape is either round, oval, oblong, or heart-shaped, and it forms the under surface to the cephalo-thorax. At its fore extremity is a sort of narrow continuation of it, forming

The Labium.

This constitutes the completion of the mouth parts by stopping up the gap between the maxillæ (pl. i., fig. 2*e*). It is divided from the sternum by a groove or suture, but is never articulated to it. It is sometimes projected in the same plane as the sternum, but is more often set at a greater or less angle with it, following, in fact, the direction of the maxillæ and falces. The labium is of great importance to the spider, for without it the juices of its prey would escape, instead of being retained and guided into the throat, by the assistance of the "tongue" (a small obscure portion of structure immediately between the labium and falces). The length and form of the labium is different in different spiders; usually it is either semi-circular, sub-triangular, oblong, or quadrate; its apex is often pointed, and sometimes emarginate. Pl. ii., fig. 2*cf*., shows the labium of *Atypus*, and fig. 1*d* that of *Segestria*.

The Abdomen.

We come now to the second leading division of the spider's body—the *abdomen*. This is attached to the hinder part of the cephalo-thorax by a short, but distinct, sheath or pedicle. It is of diverse form in different spiders, round, oblong, globular, flattened, quadrate, or sub-triangular. Various humps, prominences, and other eccentricities of form are found on the abdomen in some exotic spiders, and, in a lesser degree, in several of our British species—*Cyclosa conica*, Pallas (pl. iv., figs. 6, 6*a*).

The cuticle of the abdomen is almost always continuous (*i.e.*, without folds or articulated plates), and is either soft or, at most, somewhat coriaceous or leathery in its texture. In some exotic groups, however, it is hard and corneous. The surface is sometimes smooth; at other times (and most frequently) it is clothed, more or less, with hairs, bristles, and downy pubescence. In the genus *Gasteracantha* and some other exotic spiders it is armed with strong spines. It has generally a distinct pattern upon it, formed either by colours and markings inherent in the cuticle, or else dependent upon the hues of its hairy clothing. In most cases the pattern on the upper side of the abdomen assumes some modification or other of the form of a central, longitudinal stripe on the fore part, followed by a series of transverse, curved, or angular lines, like circumflex markings, whose apices are directed forwards. The central stripe varies in its length, breadth, and form, but always indicates the position of an important internal organ, which, acting like the heart in the higher animals, receives the vital fluid, and propels it throughout the whole system. Probably the varied colour of this stripe depends on its immediate connection with the internal organ above mentioned.

In most spiders there may be observed some small impressed spots, or depressions, symmetrically placed on the upper surface of the abdomen. These are, apparently, different in number, and certainly different in size, in different groups of spiders; probably their number is, in reality, always the same, though not externally visible in all cases. In the family *Thomisides* they are often very distinct, and five or seven in number; a single one occupies the middle of the fore-extremity, and is followed by two or three pairs of others; those of each pair being widish apart and forming a transverse line. These impressed spots indicate points where the cuticle adheres by muscles, to the internal organs. Although in most cases the epidermis of the abdomen is continuous, yet in one (exotic) genus, *Liphistius*, Schiödte, it is broken up into distinct, transverse, corneous plates united at their edges by a membranous fold. In some of even our own

indigenous spiders traces may be seen of transverse folds in the cuticle towards the hinder extremity. Probably the transverse curved, or angular lines above noticed, and which give to the hinder part of the abdomen of so large a majority of spiders, its distinctive pattern, are the lingering indications of obsolete folds. The traces of folds (as well as the corneous plates in *Liphistius*) in all probability point to the once segmented structure of the abdomen, and give us a clue to the origin of the distinctive pattern just mentioned.

At the extreme point of the hinder part is a single small nipple-like prominence (pl. i., fig. 10, *f*) ; in this is contained the anal orifice ; and it was, doubtless, once the terminal segment of the segmented form of the abdomen.

Spinners.

Immediately below the anal prominence, is a more or less-closely compacted group of other nipple-like organs (pl. i., fig. 2, *g,g*, and fig. 10, *c,d,e,j,h,g*). These are, in all British spiders, six in number, with, in some families, a very short, broad, supernumerary one, generally divided by a cross-line, and placed immediately in front of the rest (pl. i., fig. 10, *a,b*). In some exotic groups the numbers are also two and four. These organs are the *spinners*, and they play a most important part in spider economy, forming also (as stated before), one of the leading characters of the order *Araneidea*.

The position of the spinners varies ; usually they are of different sizes, lengths, and direction, varying from one to three joints. At their extremities, and sometimes along the under surface of the last joint, are many minute tubes (*spinnerets*), through which the silken lines issue ; these lines are, in part, propelled at the will of the spider, and partly drawn from the spinnerets by external influences. The silk is secreted in the form of a gum-like fluid, in small bulbous-shaped organs, situated within the under surface of the hinder part of the abdomen. The silk emitted from the supernumerary organ above-mentioned is of a peculiar nature, and is drawn from it by means of the "calamistra," noted in describing the armature of the legs.

By means of this instrument the silk is carded or teased out, so as to become very flocculent and adhesive; it is then disposed about the lines of the snare for the purpose of entangling the spider's prey.

Spiracular Plates and Breathing Organs.

Beneath the fore extremity of the abdomen are two, generally very distinct, roundish or oval plates, placed in a transverse line, (pl. i., fig. 1, *c,c*, and fig. 11, *b,b*). In some spiders—*Theraphosides* and *Dysderides*—these are four in number, the two additional ones succeeding the others a little way towards the middle of the abdomen (pl. ii., fig. 2, *a',a'*, *c',c'*, and fig. 1, *a,a*, *b,b*). At the posterior-margin of each of these plates is a transverse slit-like opening, leading to the main breathing organs, which are situated underneath. These organs are a modification of the tracheal system found in the *Insecta*. Instead of the air being taken (as in that class) into simple tubes from numerous external orifices, and so distributed over the body for the aëration of the vital fluid; it is taken in through the transverse slits, mentioned above, into a special breathing apparatus; thus localizing the main supply of air, in a way somewhat analogous to the action of the lungs of the mammalia, and thence aërating the vital fluid as it passes out of the dorsal vessel, or heart. There are, however, in many spiders, other orifices leading, probably, to simple air-tubes (or tracheæ) in different parts of the abdomen. One of the most noted instances of this, among British spiders, occurs in the genus *Anyphana* Sund. (pl. i., fig. 11, *c*.) Another remarkable instance is in the genus *Cambridgea*, L. Koch., found in New Zealand.

Genital Aperture.

One other portion of the abdominal structure must be shortly noticed—the genital or sexual aperture. This is situated exactly between the openings of the breathing apparatus, and leads to appropriate internal organs. In the male sex the fecundating fluid is secreted in these organs. The curious office of the palpi of male spiders, as instruments for the reception and application of this fluid, has been already described.

The external aperture (in males) is very minute, but in the female sex it is much larger, of very varied form, and frequently has a process of diverse shape and structure, in different species, connected with it; this process is also often of considerable length, and is probably of use in the deposition of the ova. The form and structure of the genital aperture, and its processes afford some of the most distinctive characters for the specific determination of female spiders; it is only visible as a distinct orifice when the spider has attained maturity, of which it is the unerring sign (see pl. i., fig. 2, *f*, and fig. 11, *a*; also plate ii., fig. 2, *b'*).

INTERNAL STRUCTURE.

In a monograph like the present, any lengthened details of the internal structure, or anatomy of spiders, would be out of place. Certain points have been already necessarily touched upon in explaining their external structure; it will, therefore, suffice here to refer to the internal organs in very general terms.

Organs of Digestion.

These consist of a large sac or stomach, furnished with short lateral branches, corresponding with the number of legs on each side, and placed within the cavity of the cephalo-thorax. The juices of insects, which form the spider's food, pass into this stomach from the mouth parts, or throat, through an œsophageal tube, and thence into the abdominal intestine, by means of a canal which runs through the pedicle connecting the cephalo-thorax and abdomen. At its hinder extremity this intestine empties itself into a large, rounded pouch or *rectum*, and thence all undigested matter is excreted through the anal orifice. There are also appropriate glands in the cephalo-thorax for the secretion of gastric juice, and others in the abdomen for the secretion of bile, appearing to subserve purposes similar to those effected by the analogous products of the stomach and liver in the higher animals.

Organs of Circulation.

Circulation is effected by means of a large, elongate, four-chambered vessel, running close beneath the cuticle, along the

middle at the fore part of the upper side of the abdomen, and called the "*Dorsal vessel*." In this vessel the vital fluid is collected, and thence circulated by a regular system of arteries and veins. The position of the dorsal vessel is almost always apparent on the outside (as before noticed) by an elongated stripe, or band, of varied form and colour.

Organs of Respiration.

These have already been referred to. The more localized nature of the main breathing apparatus in spiders than among the *Insecta* plainly marks a progress to a higher type of organization; though the peculiarly *pulmonary* nature attributed to them, in most of the general works on Arachnida, appears calculated to mislead.

The respiration of spiders is, in fact, effected not by *pulmonary* organs, but by essentially tracheal ones, which may be described as consisting of both *Tracheæ* proper, and *Sac-tracheæ*. The latter form the principal breathing organs, their position being shown outwardly by the spiracular plates detailed above; they consist of a collection of flattened membranous sacs, enclosed within an outer membrane, and lying together somewhat like the leaves of a book. The air is collected in these *Sac-tracheæ*, and re-oxygenates the main body of the vital fluid in its passage through the dorsal vessel; while by the *Tracheæ* (properly so called) air is conveyed in small quantities to the vital fluid in various parts of the system. To any one familiar with the structure and functions of the lungs of mammals, the essential difference between them and the *Sac-tracheæ* of spiders will be obvious.

Nervous System.

Spiders also possess a very perfectly organized nervous system. Within the fore-part of the cephalo-thorax is one main bilobed ganglion, or mass of nervous matter, emitting nervous threads to each of the eyes, falcæ, and labium; not far behind this, and continuous with it, is a still larger mass, from which nerve-threads issue to the legs and palpi; a fascia of the same nature

is continued to the abdomen, where it is subdivided, and branches out to all the different abdominal organs.

Organs of Reproduction.

The situation of these, with their external form, has already been noticed. The internal parts of both male and female are very simple; in the former they consist of two long, narrow, convoluted tubes, and in the latter, of two elongated Ovaria, placed lengthwise within the ventral surface of the abdomen.

Near the external opening of the Ovaria, in the female, there are generally some (fewer or more) contortions corresponding to the more or less contorted, or complex, structure of the palpal organs of the male. It is through these contorted tubes that the fecundating fluid is passed, by means of the palpal organs of the male into the bulbiform reservoirs, or *Spermathecæ*, of the female.*

Habits and Economy of Spiders. Their snares and mode of entrapping their prey.

Perhaps to most lovers of Natural History greater detail on this part of the subject would be acceptable; but even these interesting points can only be touched upon comparatively briefly here, especially as in the following descriptions the habits and economy of the different species (so far as known) are frequently referred to.

Evidently formed to prey upon other creatures (for, as yet, no instance is known of a spider feeding upon vegetable substances) and the majority of their prey being able to seek safety in flight or swiftness of foot, we find, as we should expect, spiders endowed with skill and craft rather than with great comparative strength.

There are several ways in which the rapacious portion of creation obtain their prey: *Firstly*, by running it down in fair

* Those who desire to enter more minutely into the subject of the internal structure and anatomy of spiders may be referred to the works of Treviranus, Emile Blanchard, Philip Bertkau, and others. In regard to the mode of reproduction, the main facts at present known are very clearly stated and illustrated in a little work (vol. 2 of the "American Natural History series") lately published at Salem, Mass., U.S.A., "On the Habits and Structure of Spiders," by Mr. J. H. Emerton.

open course, which is not often adopted by spiders, though I have seen, now and then, some species of *Lycosa* do so; *secondly*, by searching about carefully, and, when the prey is descried, stopping short and leaping upon it. This is a method very commonly in use among the *Lycosides*, *Salticides*, and some few of the *Drassides*; *thirdly*, by lying in concealment until the prey comes within reach; thus spiders lie in wait, hidden, or partly so, among the petals, or other parts, of the bloom, of flowers, particularly those of a composite nature, and then seize the insects which come to suck the honey. Some spiders, especially among the *Thomisides*, who are much addicted to this last mode of replenishing their larders, have a habit of elevating, depressing, and moving their fore legs laterally to and fro. The tips of the legs, when thus protruding from among the petals of a flower in which the spider is concealed, bear a striking resemblance to the stamens and anthers gently moved by the wind. A friend of mine, who has noticed this, believes that it is done for the express purpose of attracting insects to the flower; but as the spider exercises the habit at other times, as well as when lying in wait for insects, this interpretation of the fact seems scarcely tenable; though, no doubt, the habit tends to the spiders' advantage by disarming suspicion on the insects' part.

Another method of entrapping their prey, adopted by some of the most extensive families of spiders—*Agelenides*, *Theridiides*, and *Epëirides*, as well as by some other spiders—is the spinning of snares in which the insects become entangled. This mode is so well known as scarcely to need mention. Everyone who has given even a cursory attention to spiders' webs will have observed the beautiful geometric wheel-like snares hung upon their suspensory lines over a ditch, or in gaps and openings among plants, bushes, and trees. The general plan of these snares consists of a number of lines radiating from a central point, and crossed, at more or less regular intervals, by others in a transverse direction, like the rounds of a ladder or the ratlines of a ship. The cross-lines are, in fact, formed by a single line passed round

and round from the centre in a spiral form; a large portion of it, towards the outer part of the snare, being thickly studded with very small globules of viscid matter, looking like little drops of dew; these serve to entangle the flies and other insects when they get into the web. The construction of this kind of snare is carried on, at times, very expeditiously. I have noted a geometric snare completely formed, from beginning to end, within half an hour.

Geometric webs are placed at different angles with the plane of the earth's surface, according to the species of the constructor, and are not all equally regular, or perfect; one of the most perfect, among British spiders, is that of *Cyclosa* (*Epeira*, Blackw.) *conica*, Pallas. (pl. iv., fig. 6), while one of the least perfect, among all spiders yet known, is that of *Hyptiotes cavata*, Hentz. —a North American species. A curious habit of this spider is noted further on.

The subject of web-spinning is one of the most interesting parts of the study of spiders, though a great deal of leisure and patience are required to carry out any extended observations upon it. It is wonderful to see the great mobility of the abdomen, by which the spinners are directed to any desired point. The legs, and, especially, the claws at the ends of the tarsi, play a very important part here also, enabling the spider to stretch, or to tighten its lines, and to gather them up when slack. Those spiders possessing *Calamistra* are further enabled to prepare (as before noticed) a peculiarly, flocculent, adhesive web from silk drawn out of the extra spinning organ, with which the *Calamistrum* is invariably correlated. The geometric snares above described give the name to the great Latroillean group of spiders "*Orbitelariæ*."

The other great group of snare-spinners is that of the "*Retitelariæ*," Latroille. These must also have been frequently observed by all, excepting the no-eyed part of mankind; their general plan consists of a more or less extended, horizontal sheet of thin web with numerous lines above and below, crossing and recrossing each other in all directions. The

Linyphia take up their station, in an inverted position, under this sheet; other spiders lie in wait at a little distance. The snare of a very common *Linyphia*—*L. montana*, Clerck.—may be seen in any box-bush, yew, or holly hedge in our gardens; it is the most perfect of its kind, and is suspended by the opposed effect of the upper and lower lines, being also tightly braced down by vertical lines from the under side to the leaves and twigs below. I conclude that most of these snares are formed at night, inasmuch as I have frequently watched for a considerable period in day-time without ever having been able to observe the *modus operandi*. The snares of *Theridion*, and other allied genera, consist only of irregularly intersecting lines; that of the *Agelenides* is a more compact horizontal sheet, and in connection with it is constructed a tubular or funnel-shaped retreat, in which the spider lives. The most perfect snare of this sort is that of *Agelena labyrinthica*, (p. 67). Others of this group, belonging to spiders of the genera *Tegenaria* and *Amaurobius*, may be seen any day, in the angles of unused rooms, outhouses, and cellars.

Spiders lines may frequently be observed strained across open spaces, of sometimes many feet and even yards, in extent. This has been explained, by some naturalists, to have been done by the help of a current of air carrying the thread across. I cannot, of course, say that it never has been thus effected; though I have certainly never myself witnessed it. I have, however, on several occasions, seen a spider fix its line, then run down to the ground, across the intervening space, and so up the opposite side, trailing its line as it went; and then having hauled in the slack, it fixed the line to the desired spot. This I believe to be the usual mode of proceeding in such cases.

The expedition with which, when once set about, spiders construct their webs, has already been noticed, and it is again referred to in the description of *Linyphia triangularis* (p. 228). Other spiders are equally expeditious, and the knowledge of this is not without practical utility. A case once occurred in which the conviction or acquittal of a prisoner turned upon whether an

outhouse door had been fraudulently opened or not. The door itself was uninjured, and the prisoner was finally acquitted on proof that the keyhole on the morning of its examination was found covered with cobwebs; from this the Counsel for the defence argued that it could not possibly have been touched during the previous night, in which the alleged opening of the door had taken place. The defence would have fallen through at once had it been known that such webs might have been, and probably the one in question was, spun in the course of half an hour or less.

The skill and craft of spiders is also very evident in the way in which many of them deal with their prey when entangled, or otherwise captured. An instance of this is noted (p. 78) in respect to *Pholcus phalangioides*, which, like some other spiders, winds its prey up tightly with silken lines. Another spider, *Misumena vatia*, Clerck., lying in wait in the blooms of flowers, seizes the bees and other insects which frequent them. I once observed one of these spiders, lying in wait in a rose, capture a butterfly (*Lycena phlaeas*); which was seized and firmly held by the slender pedicle connecting the head and thorax—in fact by the neck—the very best point for overpowering it; on the same principle as that on which a bull-dog pins the bull by the nose, or a deer-hound the deer by the ear. This mode of seizure has also been adopted in all the instances that have come under my own observation, whether the prey were a butterfly, a bee, or any other insect.

Although exceedingly voracious, spiders are sometimes (when full-grown) able to endure long fasts with impunity. For an instance, in my own experience, of an eighteen months' fast, during which time the spider appeared to be strong and healthy. See Zoologist 1853, p. 3766. Mr. Blackwall (Spid. Great Brit. and Irel., p. 5) records a similar instance.

Spiders Nests and Egg Cocoons.

Although the two great groups of spiders mentioned above are the only ones in which *snares* are spun to entrap their prey, all spiders can spin, and numbers form silken linings to holes in

the earth, or crevices in bark, rocks, walls, and posts; many make silken, tubular or other nests, as well as cocoons of various forms for the reception of their eggs. Some of the latter are exceedingly pretty objects, those, for instance, of *Agroëca brunnea*, p. 35, pl. ii., fig. 7a, and *A. proxima*, p. 36, pl. ii., fig. 7, as well as those of *Ero thoracica*, p. 233, pl. ii., fig. 8a, and *Theridion pallens*, p. 92, pl. ii., fig. 8. The egg cocoon of the *Lycosides* is either globular, or flattened at the poles; those of the *Drassides*, and of some of the *Thomisides* are lenticular. The spiders which spin tubular retreats are included in the group *Tubitelariæ*, Latreille. The *Dysderides* and *Drassides* belong to this group, while those which live in a cylindrical hole excavated in the earth, belong to the Latreillean group *Territelariæ*. In this last group are included the various species of trap-door spiders, to which we have no British representative, more nearly allied than the species of *Atypus* (pp. 2-4, pl. ii., fig. 2).

Spiders vary greatly in their relative fertility; and the rarity of some species is probably owing to their limited fecundity. Some produce a large number of eggs, others fewer; the cocoon of *Agroëca brunnea* contains about 40 or 50, that of *Ero thoracica* about a dozen, while that of *Oonops pulcher* is said to contain usually no more than two eggs. It is probable, however, that the same spider may construct more than one cocoon.

Gossamer Spiders.

The use of their silken lines for travelling through the air must not be passed over without remark. There is, I suppose, no one who has not observed the numerous silken lines, and small, white, flocculent, flake-like webs floating in the air—especially on a fine day in early autumn. These are almost all formed by the young of numerous species of spiders. Whenever and wherever they move spiders appear to leave a line or lines behind them; these lines trail along and adhere to every intervening object, or else float about, higher or lower, according to the density of the atmosphere; hence their common use as a local, and generally trustworthy, prognostic of the weather. The flake-like form of gossamer is produced by the aggregation

of numerous floating lines, and depends upon atmospheric conditions, being most common in early autumn, and only in very fine, settled weather. Both in autumn and spring (particularly the latter) there appears to be a great restlessness and moving about of immature spiders of many kinds, quite as difficult to be fully accounted for as the migrations of birds. On a bright, and tolerably still, spring morning, railings, especially those fencing a causeway across water-meadows and swamps (situations peculiarly prolific in spiders), and the parapets of bridges, are often thronged with individuals of numerous species, principally of *Lycosides* and *Theridiides*; these may be observed running up and down on the upper railing, elevating themselves on tiptoe, thrusting up the abdomen, and, with a small muscular effort, jerking themselves off, and floating away in the breeze on their silken lines, which may often be seen issuing from the spinners; the lines, in the first instance no doubt, are propelled from the spinner at the will of the spider, but are afterwards further drawn out by the influence of the current of air, and when sufficient line has been drawn out to float the aeronaut he gives a little jump and sets sail.

Spiders may sometimes be found adhering to the white flakes of web, or flocculi mentioned above, but this is not by any means usually the case.

From the few remarks here made on this part of the subject, it will be seen that the popular idea that gossamer is due to a particular *species* of spider called the "gossamer spider" is quite erroneous.

Some other uses of Silken Lines.

A very convenient use of the silk lines is made by one of our commonest "jumping spiders," *Epiblemum scenicum*, Clerck. This spider is found on perpendicular walls, and always has a line trailing behind it from the spinners, and adhering to the surface of the wall. The spider in this situation is thus enabled to leap from a considerable distance upon its prey, which it could not possibly do unless it had a line to bring it back again to the perpendicular surface it had left at its spring. Another use

of its silken line is made by a species of *Epeira*, which I have observed to drop down a considerable distance, and with great swiftness, upon its prey, from the snare to the ground; immediately again ascending with the prey in its falces, by means of the line emitted in its descent.

Commercial use of Spider's Silk.

It is not probable that any use (in a commercial sense) will ever be made of spider's silk; least of all is it probable in respect to British spiders.

The possibility, however, of winding, and weaving spider's silk into articles of commerce is undoubted. Gloves and stockings were made of it in France as long ago as a hundred and fifty years; and quite recently—1865-1869—the fact has been proved by Dr. Burt G. Wilder, of the Cornell University, Ithaca, U.S.A. The carnivorous propensities of spiders are the great hindrance to their being reared for the purpose of obtaining the silk.

Are Spiders Venomous?

Among other reasons why spiders are so much neglected by the common run of natural history observers, is the idea that their bite is poisonous. This is, I think, certainly not the case in respect to any known British spider. I have myself often tested the absence of venom in some of our strongest species; and Mr. Blackwall's far more extended experiments some years ago—Linn. Trans. xxi., p.p. 31-37—were attended with a similar result. There is, however, good reason to believe that in the South of Europe, as well as in the Tropics, and certainly in New Zealand, there are some venomous spiders, but these are not among the larger kinds, and the species are probably few.

In all cases of bites by spiders—as in the case of bites or stings by venomous insects, scorpions, and serpents, the effect of course, depends very materially on the immediate condition, both of the biter and the patient.

Although, however, not generally venomous in respect to mankind, the bite of a spider is undoubtedly poisonous when inflicted upon its prey. One effect of it is, probably in most cases, to

benumb or paralyze the insect, which, if not at once devoured, remains in a state of insensibility, and available as fresh food for some hours, and perhaps for several days.

Differences between Mature and Immature Spiders.

A remark should be made on a point upon which every collector and observer of spiders finds a difficulty almost as soon as he begins to study them; that is how it is to be known whether the myriads, often, of spiders met with are adult (*i.e.*, full-grown) or not. It will be borne in mind that a spider undergoes no metamorphosis at all; neither *complete*, as in the case of a butterfly or moth, which has arrived at maturity through the well-marked stages of caterpillar and chrysalis; nor *incomplete* as among the Hemiptera (or bug tribes), and the Orthoptera or grasshopper group. A spider is *a spider*, with but very little wanting of perfection in its general external appearance, from the time of its exclusion from the egg to its maturity. Maturity is arrived at simply after several successive moultings of the whole skin; the only outward structural change that takes place being at the final moult, when the male spider attains its complete armature of spines, bristles, and hairs, according to its kind, and the last (or digital) joints of the palpi, up to that time tumid and homogeneous, break up into the digital joint properly so called, and the curious, and more or less complex, congeries of lobes, bulbs, and spines—palpal organs—the use of which has been before noticed; the full dimensions of the legs are also sometimes not attained until the same period. The female spider, at her last moult, merely developes the genital aperture, with (in those species to which they are peculiar) its external processes, as well as its internal structure. Up to this time the aperture is invisible, though (like the palpal organs of the male), it has been gradually developing beneath the cuticle.

The *pattern* of a spider (that is the design formed by its colours and markings) differs, in general but very little in immaturity and maturity; excepting that it is usually more distinct in the young, and in female examples. Still in some species there is a very striking difference between the colours and mark-

ings of the very young spider, and those which it attains after one or two changes of skin; *Epeira diademata*, Clerk., and *Zilla x-notata*, Ibid., two of our commonest spiders, are conspicuous examples of this. Practice, and careful observation only, will enable the collector to pronounce, at a glance, upon the species of a large proportion of very young spiders; while in some groups the most experienced collector is unable to decide, with any certainty, on the species until maturity is attained.

Difference in Size and Colours between the Male and Female Spider.

Another difficulty in the collector's way is the great difference both in size, colours, and pattern between *the sexes* of many spiders. Excepting one spider—*Argyroneta aquatica*, Clerk.—all those found in Great Britain have the female either equal in size, or else larger than the male. The difference, however, between the sexes is not, in these northern regions carried to the extreme limits which are frequently reached in the tropics. The female of *Nephila chrysogaster*, Walck. (an almost universally distributed tropical Epeirid) measures two inches in the length of its body, while that of the male scarcely exceeds 1-10th of an inch; and is less than 1-1300th part of her weight. As an instance of great disparity in size between the sexes of some British spiders, *Misumena vatia*, Clerk., may be mentioned. The colours and markings of the sexes differ more frequently than the size; the spider just named being a striking instance of this also. Attention is called to these differences, wherever known, in the following descriptions; but in respect to new species, or to those spiders whose sexes are not yet both ascertained, experience alone will prove the specific identity of some, whose males and females may appear at first sight to belong to quite distinct species. It is difficult, not to say impossible, to account for very great differences in size between the sexes, on any other hypothesis than that of "natural selection." Many Epeirids exemplify this difference in size very strikingly, among them the spider noted above—*Nephila chrysogaster*—is an extreme instance. It has been proved with respect to one of our own commonest Epeirids—*Epeira diademata*, Clerk.—and

it is probably also an occasional habit with many others, that the female will attack and kill, and even devour the male; now it is obvious that in her attempts to catch him, the chance of escape will be in proportion to the smallness of his size and his activity; thus the larger the male (it being remembered, of course, that the male is always, excepting in rare instances, the smaller and weaker of the two) the greater his risk of being destroyed, instead of becoming the progenitor of a future race. The smaller males will therefore more commonly be the ones to perpetuate themselves; and so, by a kind of "natural selection" this sex will become gradually less and less in size, until that descending limit is reached beyond which the male would not be large enough to perform the offices for which it was created. That limit certainly seems to have been reached in the case of the tropical spider above alluded to. The disparity in size between the male and female of *Epeira diademata* is also very great.

It should be remarked that in measuring spiders the "length" is, unless otherwise stated, the length of the *cephalo-thorax and abdomen*, exclusive of the palces.

Protective resemblance of Spiders to Insects or other Objects.

Another very interesting part of the study of spiders (as indeed it is of all the ARTICULATA) is the way in which some species resemble others, belonging often to very widely separated groups of this branch of the Animal Kingdom. This resemblance has been called "mimicry;" an unfortunate term as it seems to me, because it appears to imply conscious imitation, in which, of course, no naturalist (so far as I am aware) believes for a moment. The resemblance is sometimes exceedingly close, and may be called mimetic; but the more abstract phrase, "protective resemblance," expresses all that is really understood by the fact, and does not seem to be liable to misconception. The *resemblance* is undoubted, and its *protective effect* has been proved in some cases, and may be assumed in almost all. The most striking instance of "resemblance" known to

me, among British spiders, is that of *Micaria scintillans*, Cambr. (p. 12), found in some abundance in the Isle of Portland. This spider so nearly resembles a large ant, which abounds in the same locality, that it requires the second look of even a practised eye to be sure whether it be really the spider or the ant. The advantage, or "protective effect," afforded to the one thus resembling another, is not always easy to be understood at once; it may often consist in the protection from certain dangers, to which the creature resembled is either not liable, or may be specially guarded against; thus the ants of Portland, being of a hard and horny nature may not be a favourite food for those enemies which would find an agreeable morsel in the softer and more succulent spider; the latter, therefore, would deceive, and so escape such enemies, from its resemblance to the distasteful ants. In other cases (and, possibly, also in the one just mentioned) the resemblance may give the resembler a chance of obtaining its prey more easily. Thus, in the South of Africa there is (in Caffraria) a spider resembling an ant even more closely than the Portland species; the habit of this ant is to feed on the honeydew along with multitudes of insects of other orders; those latter have no dread nor suspicion of the ants, which, in fact, have a common object in view, and do the other insects no harm; but then, under cover of a close resemblance to the ants, come the spiders, who, unsuspected and unresisted, regale themselves at their leisure upon the defenceless insects.*

Akin to this kind of resemblance, is that which many spiders bear to various other objects, such as the buds and blossoms of plants, bits of lichen, small stones, and even the droppings of birds; also to the colour of the surrounding surface, whether of the ground, or of the bark of trees, or of walls; or to the tints of the leaves of trees and plants, and the petals of flowers. *Misumena vatia* (before noticed) is an example of this kind of resemblance. I find this spider very commonly in the blooms

* This interesting fact has been kindly communicated to me, together with specimens of the spider and ant in question, by an enthusiastic naturalist and colonist in South Africa, Mr. J. P. Mansel-Weale.

of the great mullein—*Verbascum thapsus*—to which the pale yellowish hues of the spider are well suited for its concealment in the yellow blossoms. An allied spider—*Thomisus onustus*, Walck.—found here, and in the neighbourhood of Wokingham, on the heather blooms, and upon some other pink flowers, is beautifully tinted with pink, chiefly in its younger and feebler stages. The Rev. C. W. Penny (of Wellington College, Wokingham) tells me that he has found examples of this spider on yellowish blossoms, and that these examples are generally of a yellowish hue, quite devoid of the pink colour of those found on pink blooms. I am inclined to think that this is not invariable, inasmuch as I have found here the more mature examples (which are generally devoid of pink colouring) also on the pink heather blooms. The protective resemblance of colour would not be so necessary, in the above instance, for the protection of the more mature as for that of the younger spiders, and therefore we might expect to find the former on flowers of any colour growing where the spiders are found; while I have certainly only met with the younger, pink-coloured spiders, on the pink heather blossoms. Another Thomisid—*Xysticus sabulosus*, Hahn.—so exactly resembles both in form and colour the little bits of grey, yellowish, black and red-brown mottled stone found on the bare patches where turf has been pared off on our heaths, that until the spider moves it is almost impossible to detect it. *Lycosa herbigrada*, Blackw., a grey spider marked with black and brown markings, is another instance of exact adaptation to the grey sandy heaths where it occurs; while *Philodromus fallax*, Sund., is equally well concealed by the perfect adaptation of its colouring to the dull yellowish sandy spots where alone it is met with. One of our common Epeirids—the beautiful *Epeira cucurbitina*, Clerck.—found on rose and other bushes, in gardens and woods, is of a clear, bright, green colour, with a brightish red spot at the hinder extremity of the abdomen; this spider, when (as it often does) it sits tucked up between the green shoot and the axil of the leaf, looks exactly like a young bud just ready to burst.

Another spider, abundant in many marshy places in the South of England—*Tibellus oblongus*, Walck.—has an elongated-oval body with longish legs, and is of a uniform dull yellowish hue ; it is an exceedingly active spider, and when running in autumn among the dull yellowish, decaying, coarse grass and rushes, looks much larger than it really is ; all of a sudden you lose sight of it, and unless you are aware of its habit you are puzzled as to what can become of it, and are going to give it up as lost ; but there it is close to you, stretched out at full length along the exactly similarly coloured stem of grass or rush, with its first and second pairs of legs put forward in a straight line, and its third and fourth pairs stretched in the same way backwards, so as to be scarcely distinguishable from the stem itself. In spring and summer *Tetragnatha extensa*, Linn., a greenish spider, con-coals itself in the same way along the green stems of grass and rushes. Many other instances might be given, but these are sufficient here to call attention to this most interesting part of the study of spiders.

Enemies of Spiders.

Spiders, formed for the destruction of others, have yet themselves many enemies. They prey upon each other, as well as upon all the insect tribes, and on other Arachnids. Numbers are also destroyed in the young state by the *Phalangides* or “ Harvest-men.” The large black and red ant of our woods—*Formica rufa*—also destroys them so completely, that in those localities thickly inhabited by the ant, I have generally found it almost useless to search for spiders. Wasps and hornets also devour them ; as as well as do birds, lizards, and other reptiles, and probably many of the smaller mammalia. Some others of the Hymenopterous insects prey, parasitically, upon spiders. For instance, *Pompilus sepicola*, F. Smith—a large, black and red, wasp-like insect—seizes some of our largest spiders—such as *Trochosa ruricola*, De Geer, and *T. terricola*, Thor.—paralyzes them with its sting, leaving them, however, still living, drags them by main force to its hole in the sand, and deposits its eggs in the spider’s body ; the

larva soon hatch, and the spider in its comatose state affords them constantly fresh food, and in sufficient abundance to bring them to a state of maturity. Other smaller parasitic Hymenoptera deposit their eggs in the egg-cocoons of spiders; the larvæ feeding upon the eggs of the latter. An apodous (probably hymenopterous) parasitic larva is often found adhering to the abdomen of several species of *Theridion* and *Linyphia*. I have found it of even a larger size than the spider itself, but still adhering to its abdomen. Every attempt to rear the perfect insect from the parasite has hitherto failed. The spider does not usually appear to be much the worse for its hanger-on, though, no doubt, it must eventually be destroyed by it.

Spiders frequently lose their limbs in battle, but these losses are made up for by the power of reproducing the lost member; they have also the power, when held by the leg, of throwing off a joint, or even the whole limb, by means of a violent muscular effort; and thus often effect their escape; judging, no doubt, that "it is better to lose some than all."

Drought, as well as excess of wet, but more especially the former, and unseasonable weather of all kinds, have a strong effect in reducing the numbers of many spiders. Some species, found in marshy places, are so susceptible of injury from lack of moisture, that they cannot be carried alive in a chip-box for more than an hour or two, unless a small portion of damp moss be placed with them in the box. Others, on the contrary, appear to thrive best on the most arid spots, and in the hottest sun. As a rule, however, spiders are "thirsty souls," constantly requiring water to drink. Doubtless they imbibe the dew drops when other sources of moisture fail.

Affection of Spiders for their Eggs and Young.

Great attachment is shown for their young by many spiders. Some species of *Clubiona*, perhaps all of them, tend upon their young, brooding over them as a hen does over her chickens,

until they are old enough to separate and find their own living. The young of *Atypus piceus* (p. 2) live with their mother in their tubular abode, for a considerable time after they are hatched; coming out at times for air and exercise, and fed by insects brought into the tube by their parent. At least, so I conclude, from having found the *débris* of beetles and earwigs in the tube along with the young brood of spiders. Many (probably all) of the *Lycosides* show great affection for their egg cocoons, which they bear about attached to the spinners; and, if deprived of them, search anxiously about, eagerly seizing the cocoon when found, and again and again doing so if it be repeatedly taken from them. These spiders also carry their young on their backs, until old enough to shift for themselves. A mishapen, fluffy-looking, little brownish lump may often be seen running about among the grass and herbage; but, on an attempt to take hold of it, suddenly the lump breaks up into scores of minute spiders, which hastily disperse in all directions; the now shrunk mother remaining quietly until the panic is over and her brood again gathered round her. A pretty little Theridion, *T. bimaculatum*, Linn. (p. 91), likewise carries its egg-cocoon about, suspended between the legs, and only relinquishes it when force is used, regaining it quickly, if possible. Although in many, perhaps most, instances the males and females live separate lives, yet in some cases they live amicably together—for instance, the two sexes of *Agelena labyrinthica* (p. 67, pl. i., fig. 1) may be found in great amity together in their tubular retreat. So also those of *Meta segmentata*, Clk., *Linyphia marginata*, Clk., and others, inhabit the same web when adult.

Duration of a Spider's Life.

The length of life among spiders is evidently very varied. It is probable that some species arrive at maturity in a few weeks after being hatched; others, particularly those which hibernate during the winter months, require a very much longer period—in some cases perhaps more than a year; and it is probable also

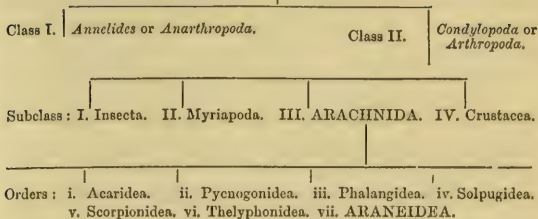
that, as a rule, the life of a spider soon closes when its eggs are laid, or its young hatched and able to shift for themselves. In most cases the males disappear very quickly after the impregnation of the females; but without a doubt some of our house-spiders—as *Tegenaria* and *Amaurobius*—will, under favourable circumstances, live for more than one season, perhaps for even several years. Mr. Blackwall states (Spid. Great Brit and Irel., p. 8) that *Tegenaria civilis*, and *Segestria senoculata* have been proved to live for four years. The subject, however, of the duration of life among spiders is involved in much obscurity, owing to the difficulty of making any trustworthy observations upon it.

Classification of Spiders.

This portion of the subject must not be passed over, though it cannot be gone into at any great length.

One of the first things that a Natural History collector desires to know something about is, how to arrange scientifically the objects of his study. Now, in respect to spiders, there is, of course, the same basis of classification, as there is in regard to every other Natural group. *Form, structure, colours, and markings*, and, in a lesser degree, *size*, are the chief characters upon which all classification is based. The true spiders—*Araneidea*—form a remarkably homogeneous group of the Great Branch of the Animal Kingdom—*Articulata*; and constitute one out of the seven orders of the class *Arachnida*.

The basis of the classification of spiders has already been touched upon, in defining what a spider is, and in distinguishing it as well from insects, as from the members of the collateral orders—*Acaridea*, *Phalangidea*, and *Scorpionidea*. It will suffice, therefore, to diagnose shortly the Arachnida generally, and the order *Araneidea*, which we are at present treating upon. Perhaps the following diagram will be useful, as giving a general idea of the whole subject:—

Branch ARTICULATA.

ARACHNIDA.—Not subject to metamorphosis, but developed by successive moultings of the skin. Organs of locomotion, eight. Body, in general, divided into two principal parts, *Cephalo-thorax* and *Abdomen*; in some groups the abdomen is divided into more or less distinct segments, but in such cases no organs of locomotion are ever attached to them. Respiration (where distinct organs exist) is either tracheal, sac-tracheal, or the two co-existent.

Coming now at once to the order ARANEIDEA, we have the two parts of the body, *Cephalo-thorax* and *Abdomen*, always quite distinct from each other. The former, by its converging lateral indentations, shows unmistakeable traces of pristino segmentation; the latter, occasionally showing the same by transverse folds in the integument near the posterior extremity; excepting in these respects the cuticle of both is continuous. *Palpi*, in males, used in copulation; and especially developed, at their terminal joint, for that purpose; in females the palpi are simple, and generally terminate with a single claw. *Legs* always furnished with two, or three, terminal tarsal claws. *Respiration*, both tracheal and sac-tracheal.

By the above characters spiders are at once separated from all other Arachnids, as well as from Insects, Myriapods, and Crustaceans.

The first subdivision of the Araneidea, necessary to be noted here, is into *Families*. By some authors a previous subdivision is made into *Suborders*; but, whatever scientific truth there may be in *Suborders* generally, the whole group of *spiders* is too homogeneous, practically, to need it, or, perhaps, indeed to admit, scientifically speaking, of such a primary subdivision. Mr. Blackwall divided the Araneidea into three *Tribes*. One (*Octonoculina*) characterized by possessing *eight* eyes; another (*Senoculina*) having *six* eyes; the third (*Binoculina*) with *two* eyes. But, although this subdivision may seem to possess a certain amount of practical convenience, it sets at defiance almost all the other categories of generic characters; bringing together spiders widely different in every other respect excepting in the mere number of the eyes; and separating as widely other spiders of close and undoubted affinity to each other, differing only in that number. Equally untenable, as a basis of scientific classification, although of very great interest, are the different kinds of snares, upon which Latroille (followed since by others) based his subordinal groups, some of which, *Orbitelariæ* and *Retitelariæ*, have already been noticed.

Passing over, then, such primary groups as those above mentioned, *Families* are characterized according to various modifications of general form, as well as by some few common, but peculiar, structural details, occasionally supplemented by habits and modes of life. Next to *Families* come the *Genera*. These are groups, characterized by the ultimate details of the structure of various parts, including the form and relative dimensions of the Cephalo-thorax and Abdomen, Legs, Maxillæ, and Labium; sometimes also of the Falces; more rarely the armature of the legs; and, always, the number, relative size, and position of the eyes.

There is hardly any need to remark that, although it is usually implied (and most commonly it is the fact) that a *Family* is a group of *Genera*; just as a *Genus* is a group of *Species*; yet a *Family*, a *Genus*, and a *Species* may be (and have often been, among

exotic spiders) based upon a single individual; for, after all, the "*individual*," whether it be a spider or any other living creature, is the sole *reality* in nature; and necessarily possesses in itself all the characters upon which classification is based, be they *Family*, *Generic*, or *Specific*. The names, therefore, given to the various groups or divisions recognized in classification, are merely convenient abstractions denoting the different relations of individuals, or groups of individuals, to each other.

The *specific* characters, or those by which *Species* are characterized, now only remain to be noted. They are those of size and colour, and the pattern formed by its distribution; also slight differences in the relative sizes and position of the eyes; the height and form of the clypeus; as well as the relative length of the legs, and their special armature. In some groups of spiders the comparative length, breadth, and depth of the cephalo-thorax is a valuable specific character; so are also its normal indentations, as well as the striæ and punctures when present. In all adult *male* spiders the palpi (especially the projections or apophyses, when present, on the different joints) and the palpal organs, by their varying structure, afford the most trustworthy of all characters for distinguishing species, even when in other respects the differences may be exceedingly slight; and in almost all *female* spiders (when adult) the form and structure of the genital aperture give us some of the best characters for distinguishing the species, in that sex, of nearly allied spiders.

Species, then, are groups of individuals, in each of which the above characters called *specific* come together. Occasionally, however, individuals are found in which all the specific characters meet, excepting one or two of the least value, such as size and colour, and occasionally pattern. These constitute *varieties*.

The subject of classification, being practically exemplified in each of the ensuing descriptions of spiders, need not be further gone into here.

Mode of Capture, and Preservation.

Our Introductory Chapter on Spiders would scarcely be complete without a few words on this subject.

The study of spiders is, peculiarly suited to persons of a sedentary habit, or to those who may love natural history pursuits, but do not desire to form a collection. In this respect the observing of spiders possesses an advantage over the observation of the insect tribes in general, inasmuch as spiders are more stationary, and when found out in their hole, corner, or web, do not escape observation by flight; but require only patience in the observer to unfold much of their history and economy. The Collector often debars himself from the discovery of many a fact in the habits and life of the object of his search, by anxiety to add to his collection, and fear lest the specimen should escape. Still there are many points that can only be ascertained by a close study and examination of the object itself; and, especially in regard to spiders, the scrutiny of those often minute, but important, structural and other characters upon which the determination of their species and systematic position depend is imperative, and hence it is absolutely necessary both to capture, and to preserve specimens.

Probably the difficulty of making pretty cabinet objects of spiders has, in some measure, hindered their being studied and collected as commonly as the insect orders. But, premising here that this difficulty can be, in a great degree, overcome, it will be well to say a word first about their *capture* (on the well-known principle of "First catch your hare.")

First then it ought to be an axiom with the spider-collector never to handle a spider with the fingers if it can possibly be avoided; because they can scarcely be handled without great danger of breaking off the legs, or destroying the hairs, bristles, and spines with which most of them are more or less furnished. To break off these is to deprive oneself of one of the best characters for the determination of the spider; not to mention

that the colours and markings often depend on the hairs, and hairy pubescence with which the cephalo-thorax and abdomen are frequently clothed, and which always show sad traces of destruction after contact with the fingers. The only spiders that may be caught without much danger of injury in this way are the very minute ones (especially of the genera *Neriene* and *Walckenaëra*) upon which the wetted forefinger may be lightly placed; the moisture causes them to adhere to the finger long enough for immersion in the small phial of spirit of wine carried in the waistcoat pocket. Spiders may be boxed (separately of course) in small pill boxes; a drop of chloroform stupifies them, and they can then be examined, and rejected if not wanted, or at once placed in the spirit phial, if required for the collection; but the most convenient method of capturing a spider is to place over it an empty test tube (one of $\frac{1}{2}$ to $\frac{3}{4}$ of an inch in diameter and 3 inches long is a good general size for most British spiders); the spider instantly runs up the tube (or may be made to do so), the fore-finger then closes the mouth temporarily, and on inversion of the tube over the open mouth of the spirit phial, the spider drops down at once, and the matter is concluded. Ordinary methylated spirit is the best fluid for both killing and preserving spiders; but for the latter purpose (as the spirit is usually about 50 or 60 degrees above proof) it should be diluted with about one-fifth or one-sixth part of distilled water, otherwise it is apt, after a time, to corrugate the integument of small and delicate spiders.

Those spiders which are found running or jumping about on the ground, or on walls or trunks of trees can be easily caught thus, by means of a test tube, with a very little practice; for others, which frequent low herbage, a sweeping net (such as those used by Entomologists) must be employed; and for those which live on bushes or boughs of trees, there is nothing better than a very large umbrella into which the boughs may be beaten; and, whether in the net or umbrella, the pill-box or tube will have to be employed for the transfer of the spiders to the spirit bottle. When the day's collecting is done the contents of this bottle must be separated into tubes of different sizes, according to

their genera and species. This can most conveniently be done by turning out the whole contents of the bottle into the cover of a potted-meat pot, or into a saucer. The spiders should then be separated and placed in the tubes by means of a pair of very fine-pointed and elastic forceps, each spider being taken up by a single leg; the tube is then filled up with clean spirit, a pledget of cotton wool is placed firmly in its mouth with the forceps, together with a small parchment label on which (if the label be large enough) the name of the spider is written; or also a number is inserted in figures, referring to a note book wherein notes of locality or habits, &c., are written. The tube thus filled and stopped is then placed, in an inverted position, in a larger, wide-mouthed bottle, capable of holding several species, or perhaps a whole genus; this wide-mouthed bottle is partly filled with spirit, corked, or stopped with a glass stopper, and has a large label outside on which the name of the genus, and species, or perhaps merely the number of the tube may be placed, so as to show its contents and facilitate reference. A larger pair of forceps, with broad flattened points, is necessary for placing the tubes in the bottle, and for taking them out when the spiders are required for examination.

Spiders preserved after the above method are certainly not objects of beauty, like a collection of moths or butterflies; for though the colours and markings are usually well enough preserved the legs are often crumpled up a good deal. To the "Goodness gracious" sort of naturalists they are by no means acceptable. The only remark my collection elicited from one of this kind was, "What a lot of bottles!" A little extra trouble, however, in the preparation of a spider will render it worth noticing even by indifferent persons. When stupefied with chloroform or killed by a short immersion in spirit, the spider should be placed on a piece of cork fixed to a thin layer of lead; a few pins at various points (not through the spider, but between the legs and outside the body) will keep it in a natural position; the whole is then placed in a clean, empty jar or basin (a preserved-meat pot is one of the best receptacles I know of),

sufficient spirit is poured in to immerse the spider, and the cover is put on. In a fortnight or so the action of the spirit will, if it be pretty strong, have stiffened the specimen, which must then be placed carefully in a tube sufficiently large to receive it without too much compression of the legs; a small strip of white card should be slipped in behind it, the tube be filled with spirit and corked (or, better still, stopped with a pledget of cotton wool) and inverted in a larger bottle, as recommended above. The spider's name may also be written on paper or parchment, and inserted in the tube. Prepared this way, and ranged on narrow shelves, the spiders may be seen without removing the tubes from the bottles, and present a very neat and slightly appearance even to the most indifferent observer.

Where to Look for Spiders.

The places in which spiders are to be found may be gathered from the numerous references to localities and habitat in the following pages. It need only, therefore, be remarked here that no situation, wet or dry, high or low, should be left unsearched. In the winter and spring months moss and débris of all kinds, such as heaps of grass, cut rushes, fern, dead leaves, brush-wood, and decaying faggots, should be carefully searched, shaking out these various materials upon a newspaper, when many a rare species of *Neriëne* or *Walckenaëra*, as well as some kinds of *Drassides* and others, seldom met with elsewhere, will be found. As spring advances and summer comes on, spiders, as a rule, leave their winter haunts and get up upon the bushes and trees, and among rushes, grass, and other herbage of all kinds, when the sweeping net and umbrella, as above recommended, will come into requisition. At all times of the year spiders conceal themselves under stones, logs of wood, old bark, ivy stems, and other such shelter; while many species, especially the adult males, may be found running upon the surface of the ground, disporting themselves on walls, tree trunks, posts, and rails, or running on the uppermost bar of iron fencing. Old buildings, cellars, and

unused rooms are also the habitat of some peculiar species. In fact, wherever insect-life can penetrate, spiders of one kind or another are sure to be found; and, as in all other Natural History pursuits, the keenest eye, the most dexterous fingers, and the most unwearied toil and patience, will bring the greatest number of rarities to the Araneologist.





CLASS—ARACHNIDA.

ORDER—ARANEIDEA (or True Spiders).

FAMILY—THERAPHOSIDES

THE only British representatives of this family are rather aberrant from the general type; still it will not be out of place to give some few details of it including, as it does, the Giants of the Spider Tribes, as well as some others (notably the Trap-door Spider) of very great interest. Almost all are either "tropical" or "subtropical." They are generally of robust build, more or less covered with coarse hairs and pubescence, and of an uniform dull hue. With one exception, they have eight eyes; these are grouped, in general, on a somewhat raised tuberculiform plateau on the fore part of the caput. The falces are articulated horizontally, and have a vertical, or up-and-down movement. The cephalo-thorax is broad, but usually flattened above, with very strongly marked converging indentations, especially that at the thoracic junction. The abdomen has, on its under side, a quadrangle of more or less bare, roundish, patches, two on either side towards the fore extremity; each of these patches has a transverse slit or opening behind it, forming the entrance to the spiracular, or breathing organs. The spinners are four or six in number, and frequently two of them are of extra length, turning upwards and backwards over the hinder parts of the abdomen. Examples of this family occur in South America, reaching the great expanse of ten inches from tip to tip of the outstretched legs; the body itself (that is, the cephalo-thorax and abdomen) measuring three inches in length.

GENUS ATYPUS, *Latreille*.

The genus *Atypus* may be known at once by the enormous development of the falces. The caput is greatly elevated, while the thoracic portion is depressed. The eyes are seated transversely in three groups on a small prominence at the summit of the caput; the central group consists of two eyes in a transverseline, and has another on each side of it, consisting of three, in the form of a small triangle. The maxillæ are considerably elongated and divergent, the labium small and subconical. The abdomen is small, almost semi-globular, and the spinners are six in number; the superior pair of these are much the longest, very strong, three-jointed, and upturned. Digital joint of male palpus narrow, and scarcely concave; papal organs simple.

Three species only are as yet known in Great Britain. All these have been found in Dorsetshire, and may be included among our larger spiders. Legs, 4.1.2.3.

ATYPUS PICEUS.

ARANEA PICEA, *Sulzer*, *Gesch.*, d., *Ins.*, p. 254, tab. xxx.,
fig. 2.

ATYPUS SULZERI, *Latr.*, *Blackw.*, *Spiders of Great Britain and
Ireland*, p. 14, pl. 1, fig. 1.

„ AFFINIS, *Eichw*, *Cambr.*, *Trans.*, *Linn. Soc.* xxx., p. 320.

„ PICEUS, *Sulz.*, *Cambr.*, *Ann. and Mag. N. H.*, s. 4, xvi., p.
238, pl. viii., fig. 2, and s. 5 i, p. 106.

Two adult males of this spider were found at Bloxworth about twenty years ago, and remained, until very lately, the sole representatives of that sex found in Great Britain. The deep black and brown colour of the male, and the formidable and powerful falces of both sexes, make it a very striking spider. *Atypus* is the only genus of the family found

in these northern parts of Europe ; the curious trap-door nests, so popular in all works upon insect-architecture, belong to two other genera—*Nemesia* and *Cteniza*—possessing numerous representatives in the South of Europe.

The present spider forms a silken tube in a deep cylindrical hole in the earth, of its own excavation, and generally near the projecting ledge of a grass-grown or heathy bank. The upper end of the tube, to the length of two inches, often hangs over loosely on the surface, but sometimes it is erect among the herbage, and has an inflated appearance ; this last is generally a sure sign that the owner is at home. No aperture is discernible ; this may be either from the extremity possessing a kind of elasticity by which the mouth of the tube closes of its own accord, after the entrance or exit of the inhabitant ; or perhaps the mouth is secured by the spider after entering the tube, and spinning itself up in the same way that the tube is formed ; this closing operation would take but a few minutes, judging at least from the effects I have observed of a very few moments' use of their spinners in confinement.

Monsieur Eugène Simon (of Paris) considers that the food of this spider (which is abundant in France) consists mainly, if not wholly, of earthworms ; nests, however, of the female, found in tolerable plenty near Ventnor, in the Isle of Wight, contained a considerable quantity of the shells, and other remains, of beetles and earwigs. Although found in other, and widely distant, parts of England, *Atypus piceus* must be considered a rare and local spider. Since writing the above I have discovered a strong colony of this spider under a heathy ledge on Bloxworth Heath.

The male measures about one-third of an inch in length ; its falcus and cephalo-thorax are deep black-brown ; the legs and palpi dark brown, the former paler at their extremities ; the abdomen is dark brown, with a large, nearly black, oblong-oval coriaceous patch at the fore-part of the upper side. The female measures half an inch or more in length, and has the cephalo-thorax and falcus of a brownish olive, and the abdomen of a somewhat purplish brown colour.

ATYPUS BLACKWALLII,

ATYPUS BLACKWALLII, *Sim.*, *Cambr.*, *Ann.*, and *Mag.* N. H.,
Octr., 1875, s. 4, vol. xvi., p. 241.

This species is nearly allied to the foregoing, and closely resembles it in general form, size, and colours. It may be distinguished, among other characters, by the crushed-in appearance of the falces at their base on the inner sides. Two British examples only have been recorded, and one of these was found by myself at Portland, near Pennsylvania Castle, some years ago. The above examples have been examined and determined by M. Simon; I must, however, confess to some doubt in regard to the goodness of the species, or at any rate in respect to the identity of these examples with the French types.

ATYPUS BECKII,

ATYPUS BECKII, *Cambr.*, *Ann.* and *Mag.*, N. H., s. 4, vol. xvi.,
p. 242, pl. viii., fig. 1.

A female of this spider, which is very like *A. piceus*, Sulz., in its general appearance and colours, was found some years ago at Portland, near Pennsylvania Castle. It may be distinguished by its rather larger size, as well as by the more abrupt slope of the hinder part of the caput, and by the eyes forming a longer and rather narrower transverse area, on a rather more projecting and more pointed prominence. An adult male, presenting much more strongly-marked differential characters than the female, was given to me by the late Mr. Richard Beck (of 31, Cornhill, London), by whom it was found near Hastings.

It is not improbable that this spider will be found eventually to be identical with *A. piceus* Aussorer, a spider which I have not yet had an opportunity of examining.





FAMILY—DYSDERIDES.

THIS family, comprising five genera, may be easily distinguished among our known indigenous British spiders, as (excepting one other spider, *Scytodes thoraica* Latr., of great rarity the sole possessors of six eyes; and also by the possession of four spiracular openings; the position of these openings is, however, rather different from that of the last family, in which the two on each side are widely separated from each other, while here they are close together near the fore extremity of the under side of the abdomen. The falces are articulated either on an inclined plane, or vertically, and have a more or less lateral (or from side to side) movement. This lateral movement is indeed, so far as is known, the mode of articulation of the falces all the Aranoidea, excepting some of the present family, and the Theraphosides. The digital joint of the male palpus, and the palpal organs, strongly resemble, in their general character, those of the Theraphosides.

GENUS DYSDERA, *Latr.* DYSDERA, *Blackw.* (in part).

This genus comprises but two species as yet known to be British, both of them occurring in this county. They are among our largest spiders, and may be known at once by their dark reddish liver-coloured cephalo-thorax, prominent falces, dull reddish orange-yellow legs, and uniformly dull clay-yellow, somewhat cylindrical, abdomen, almost destitute of hairs. The eyes are six in number, disposed, close to the fore extremity of the caput, in the form of a horse-shoe, whose open side is in front. Each tarsus ends with two curved claws.

DYSDERA CAMBRIDGII,

DYSDERA CAMBRIDGII, *Thorell*, Syn. Eur. Spid., p. 455.

DYSDERA ERYTHRINA, *Blackw.*, Spid. Great Brit. and Irel., p. 370, pl. xviii, fig. 266.

This spider is found, but rarely, in old buildings, among damp moss, and at the roots of heather at Bloxworth, but is very abundant near Pennsylvania Castle, Portland, under stones and detached pieces of rock; in such situations, as well as in cracks and crevices of the earth, it dwells, and spins a thin silken tube. The length of the female is very nearly or quite half an inch, while the male is rather smaller. Legs, 1.4.2.3.

DYSDERA CROCOTA.

DYSDERA CROCOTA, *C. Koch*, Die Arachn. V., p. 81, pl. 166, fig. 392-394.

„ RUBICUNDA, *Blackw.*, Spid. Great Brit. and Irel., p. 371, pl. xviii., fig. 268.

Very nearly allied to *D. Cambridgii*, which it resembles closely in colours, but is usually rather larger; the falcies of the male are stronger, and the form of the palpal organs is different; in the present species they terminate with a prominence on either side, forming an obliquely-transverse portion, which is entirely wanting in *D. Cambridgii*; the basal portion is also of a much more globular form.

Found occasionally in the Island of Portland under stones; and once in an old building at Bloxworth.

GENUS HARPACTES, *Templeton*. DYSDERA, *Bl.* (in part).

Harpactes is very nearly allied to *Dysdera*, but may be distinguished by a more pointed caput, and three, instead of two, terminal tarsal claws; the eyes also form nearly an unbroken circle, owing to the near proximity to each other, of the two foremost ones. One species only is known in Britain, and that one is frequent in Dorsetshire. Legs, 1.4.2.3.

HARPACTES HOMBERGII.

DYSDERA HOMBERGII, *Scop.*, Blackw., Spid., Great Brit. and Irel., p. 371, pl. xxviii, fig. 268.

A common spider, in most localities, underneath the loose and decaying bark of trees, under stones, and among old faggots and firewood. I have also found it not unfrequently among moss and grass, and at the roots of heather at Bloxworth. It is of a slender and attenuated form; its legs are yellowish brown, annulated with red brown; the cephalo-thorax dark blackish red-brown, and the abdomen of a dull brownish clay-colour, paler just above the spinners. The length of the female is about one-fourth of an inch, and the male is rather smaller and slenderer.

GENUS SEGESTRIA, *Latr.*

The Genus *Segestria* may be distinguished from both *Dysdera* and *Harpactes* by a totally different position of its six eyes; these are here placed in three groups: one pair (in a transverse line) in the centre, and another pair (in a longitudinal line) on each side, at a little distance from the central group. The terminal tarsal claws are three in number. Legs, 1.2.4.3. Three species are known as British, two only being found in Dorsetshire.

SEGESTRIA SENOCULATA,

SEGESTRIA SENOCULATA, *Linn.*; Blackw., Spid. Great Brit. and Irel., p. 374, pl. xxviii, fig. 270.

This fine spider is found under stones at Portland, and also at Bloxworth, and in many other localities, under loose bark, enclosed in a thin tubular web. I have also found it snugly domiciled between the hinder part of a gate and the post, when the gate had not been opened for some little time. It may easily be known by the back of the abdomen bearing a resemblance in its markings to the back of an adder, being

ornamented with a longitudinal series of connected, irregularly-diamond-shaped, blackish patches on a greyish buff ground. The remainder of the upper surface, together with the sides and undersides, are also generally marked and spotted with dark blackish brown. The palpal organs of the male are of a simple pyriform shape, attached to the digital joint by the larger or bulbous end, and drawn out gradually into a very fine, sharp, simple point at the other end. The length of the female often reaches nearly half an inch, but the male is much smaller and the relative length of its legs differs from that of the female, being 1.2.3.4., those of the third pair are very slightly longer than the fourth, and the metatarsi and tarsi of the two first pairs are curved throughout with spines.

SEGESTRIA BAVARICA.

SEGESTRIA B. VARICA, *J. Koch*, Die Arachn, vol. x, p. 93, pl. 351, fig. 818, and *Westr. Araneæ Suec.*, p. 298.

This spider is exceedingly like *S. senoculata*; it is, however, larger—the male measuring $3\frac{1}{2}$ lines in length, and the female $5\frac{1}{2}$ lines. Among the distinguishing characters the following will serve to separate it without difficulty.

The cephalo-thorax is much more densely clothed with short grey hairy pubescence, and the abdomen also is more thickly clothed with grey hairs, considerably obscuring their colours and markings.

The spines on the metatarsi of the first three pairs of legs are much fewer; a single spine only, beneath the posterior extremity of those of the first and second pairs.

The radial joint of the male palpus is less stout, though perhaps a trifle longer in proportion to the length of the cubital.

The palpal bulb is of the same general pear-shape, but whereas in *S. senoculata* the bulb goes off very gradually into a long slender stem, whose extremity is curved and almost hair-like, in *S. Bavarica* it goes off rather abruptly into the stem

which is also shorter, less attenuated, its extremity stouter, and less curved, and also, close to its termination, there is a small prominent sharp point, giving it a bifid appearance.

This fine addition to our list of British Spiders was kindly sent to me from Glanvilles Wootton by Mr. C. W. Dale, in October, 1877; this is, therefore, its first record as a British spider. Probably its similarity to *S. senoculata* may have caused it to be mistaken for that species, and thus to have been hitherto overlooked.

GENUS OONOPS, *Templeton*.

The Genus *Oonops* (as its name suggests) may be known by its large egg-shaped eyes. These are closely grouped in three pairs, as in *Segestria*, but the pairs are all contiguous to each other, instead of being (as in that Genus) pretty widely separated. The legs are moderately long and slender—4.1.2.3. The spiracular openings in the typical species are very difficult to be seen. M. Simon has indeed questioned whether it possesses more than two. I believe that I can discern four, but if it should prove to be the case that there are only two, the Genus *Oonops* will perhaps have to be removed from the Family Dysderides. Only one species is as yet known in Britain, and that one is found, not unfrequently, in Dorsetshire.

OONOPS PULCHER.

OONOPS PULCHER, *Templ.*, Blackw. Spid. Great Brit. and Irel.,
p. 377, pl. xxix., fig. 271.

A very small, bright brickish-red-coloured, and very active spider. The female measures no more (indeed generally rather less) than one line in length, and the male is smaller. It is of a rather elongate form, and the fore part of the caput is somewhat pointed. The palpal organs are very similar in form to those of *Segestria senoculata*. The tibiae and metatarsi of the legs are armed on the underside with two parallel rows of long, strong, and generally sessile, spines, but the spider has the

power of raising and depressing them; those on the first and second pairs are the most noticeable.

Found, though rarely, among lichens on trees, and occasionally inside dwellinghouses at Bloxworth. It occurs more abundantly (in the immature state) in autumn under stones near Pennsylvania Castle, Portland. It is not adult until the spring. The six large oval pearly eyes are a very striking object through even an ordinary magnifying glass.





FAMILY—DRASSIDES.

THE Drassides include most of the numerous sombre-coloured, somewhat elongate spiders, with a usually rather depressed cephalo-thorax, which one often sees hastily escaping on the lifting up of a large stone, block of wood, or piece of loose bark. Some, however, are found on shrubs and plants, and one I have never met with excepting indoors—*Drassus Blackwallii* Thor. Few of them, excepting those of the Genus *Micaria*, possess any bright colouring, or very distinct pattern. They are mostly hairy, but not, in general, long-haired; the legs are of moderate length, usually pretty robust, and armed with spines; the tarsi have two terminal claws. The eyes are eight in number, and disposed in four pairs, or two transverse curved lines, at the fore extremity of the caput.

GENUS MICARIA, *C. L. Koch.*, DRASSUS *Blackw.* in part.

The Genus *Micaria* is a curious instance of a small well-marked group of most brilliantly adorned spiders among numerous others, nearly all, of the most sombre hues. The spiders of this Genus are small, and have the abdomen, and often other parts also, more or less thickly-covered with scale-like hairs reflecting bright metallic tints of green, purple, and gold. They resemble ants very closely in their slender attenuate forms, and are exceedingly active, running abroad in the brightest sunshine. The eyes are small, and placed in two nearly parallel curved rows, not differing much in length, and the convexity of the curve directed backwards. Two species only are known as yet in Britain; both of them are found in Dorsetshire, and, indeed, one of them is up to the present time peculiar to the county, and has not yet been found on the continent.

MICARIA PULICARIA.

CLUBIONA PULICARIA, *Sund.*, Sv. Spindl., Beskr. in Vet-Akad, Handl., 1231, p. 140.

DRASSUS NITENS, *Blackw.*, Spid: Great Brit. and Irel., p. 119, pl. vi, fig. 73.

The female of this brilliant little spider measures rather less than two lines in length, the male being smaller and of a more slender form. It is by no means rare under stones and among the dead sticks, decayed leaves, stems, and mosses of old hedgerows at Bloxworth. Besides being adorned with numerous iridescent scaly hairs reflecting golden, red, green, and purple hues from a black ground colour, the cephalo-thorax has some lines on the sides, formed by white hairs, and converging to the thoracic indentation, while the abdomen has also various similar white lines and spots upon it. These lines on the abdomen are sometimes obsolete, excepting one spot just above the spinners; this variety forms the *Drassus micans*, Bl. (l.c. p. 118, pl. vi., fig. 72), of which the type specimen was found under a stone in Portland. On the whole this is perhaps the most beautiful of all our native spiders; it is adult, usually in the spring and early summer-time, when the males may often be seen rapidly crossing the dry roads and footpaths in bright sunshine. The relative length of the legs is 4.1.2.3.

MICARIA SCINTILLANS.

DRASSUS SCINTILLANS, *Cambr.*, Trans. Linn. Soc., vol. xxvii, p. 412. pl. 54, v. 12A.

This is a larger spider than the last, and far less brilliant in its hues. The male measures a little over two lines in length, and the female often exceeds three lines. The abdomen is narrow, often strongly constricted across the middle; and the general appearance of the spider is that of a large, washed-out specimen of the last species, to which indeed it is nearly allied. The only known locality for it is in Portland, where I discovered it on the Verne Slopes in 1860. Subse-

quently—in June, 1875—I met with it abundantly on the grassy slopes, between Pennsylvania Castle and the seashore, running about among the rocks and quarries, but only when the sun shone; the absence of sunshine, if only for a minute, would cause every one of them to disappear among the grass, until the sun shone out again.

It is an exceedingly active spider, and not easily caught without damage. The best way to catch it (and, indeed, most other spiders) is to place an inverted empty glass tube quickly over it, when it will almost immediately rush up to the top, and the tube may be easily corked; the spider, if required for the cabinet, is then transferred to the large-mouthed bottle of spirit of wine, which should be always carried in the collector's pocket; but, if not destined to the spirit bottle, it may be examined through the tube with a magnifying glass and then set at liberty.

The grassy slopes where this spider occurs are also numerous frequented by a large blackish ant, to which the spider bears so very close a resemblance, that even after much practice it requires a close examination to distinguish (before capture) between the ant and the spider; both have also a similar, peculiar habit of running hurriedly, now and then, up a grass stem, as if to get a larger range of view—or it may be that both are in search of one and the same prey; both again, on the first inkling of danger, betake themselves to the shelter of the tangled grass, and to the stems and roots of other low herbages. Hitherto I am not aware that this spider has been found on the Continent.

Legs, 4.1.2.3.

GENUS GNAPHOSA, *Latr.* DRASSUS, *Blackw.* (in part).

The Genus *Gnaphosa* is distinguished from *Drassus* (*vide postea*) by the maxillæ being broader and more deeply, and obliquely, impressed across the middle, and more curved and inclined towards the labium. The convexity also of the curve of the hinder row of eyes is directed forwards, whereas in *Drassus* it is directed backwards. In their general appearance, mode of life, and the situations in which they are found, they closely resemble *Drassus*.

The head-quarters of this group, which is an extensive and well-marked one, is in Eastern Europe, Egypt, Palestine, and Asia Minor. One species alone has yet been found in England (where it is widely dispersed, but rare and local), being also found in Dorsetshire.

GNAPHOSA ANGLICA.

DRASSUS LUCIFUGUS, *Blackw.*, Spid., Great Brit. and Irel., p. 105, pl. vi., fig. 62 (in part).

„ ANGLICUS, *Cambr.*, Trans., Linn, Soc. xxvii, p. 419, pl. 54, No. 10.

GNAPHOSA ANGLICA, *Cambr.*, Ann. and Mag. N. H. s. 5, vol. 1, p. 110.

The male of this spider is $2\frac{3}{4}$ to 3 lines in length, the female often considerably larger.

The cephalo-thorax is deep brown, with a V-shaped black-brown marking near the middle—the point of the V directed backwards. The legs and palpi are of the same colour, and the abdomen is of a rather glossy, sooty-black hue, hairy, and with some erect, deeper black, stronger hairs scattered over its surface.

I have found it, though rarely, under stones, dry cow dung, and at heather roots, on Bloxworth Heath; and more frequently (during the month of June, 1877) in company with other spiders under the dry crust, formed by the desiccation of small muddy pools on the damper parts of the heath.

I have recently received it from Berwickshire, but it has not yet, so far as I am aware, been found on the continent.

GENUS PROSTHESIMA, *L. Koch.* DRASSUS, *Bl.* (in part).

This Genus is very closely allied to *Drassus*. It may be most readily distinguished by the point at which the palpi are articulated to the maxillæ, being *nearer to the extremity* than to the *base* of the latter. In general form, appearance, and structure, as well as in their mode of life, and the situation in which they are

found, *Prosthesima* and *Drassus* are scarcely distinguishable; the former is, if anything, of a rather flatter form, and more pointed at the fore extremity of the caput. Nearly all the species are either jet black or of a uniform deep brown colour. One only of those found in Britain has a reddish cephalo-thorax, all the rest are black.

Four species are recorded as British, three of them being met with in Dorsetshire.

PROSTHESIMA PEDESTRIS.

MELANOPHORA PEDESTRIS, *C. L. Koch*, Die Arachn. Bd. vi., p. 82, pl. 200, fig. 489.

DRASSUS PEDESTRIS, *C. L. Koch*, Cambr. Zoologist, 1861, p. 7558.

This spider is almost wholly jet black. The abdomen has a somewhat shiny and smooth appearance, and is clothed with very short hairs; the legs have the tarsi, metatarsi, tibiae, and genua of a reddish yellow-brown, the femora being black.

The length of the male is rather more than $3\frac{1}{2}$ lines, and the female is somewhat larger.

Found underneath stones at Portland in July, 1860; more recently I have received it from the neighbourhood of Exeter; and it has also been found in Guernsey.

PROSTHESIMA PETIVERII.

ARANEA PETIVERII, *Scopoli*, Ent. Carn., p. 398.

DRASSUS ATER, *Blackw.*, Spid., Great Brit. and Irel., p. 106, pl. vi., fig. 63.

Very nearly allied to the foregoing, and also of an almost uniform black colour, but easily distinguished by its duller hue, and a much more hirsute appearance, being clothed with longer and coarser hairs. The legs and palpi of the male are also stronger, and the digital joint and palpal organs much larger. It is found in similar situations, being abundant in Portland under stones and

detached pieces of rock, and generally distributed elsewhere beneath stones, rubbish, and among débris in hedgerows.

The length of the male is about 3 lines, and the female is a little larger.

PROSTHESIMA NIGRITA.

ARANEA NIGRITA, *Fabr.*, Syst., Ent., p. 432.

DRASSUS PUSILLUS, *Blackw.*, Spid., Great Brit. and Irel., p. 107, pl. vi., fig. 64.

Closely allied to both the foregoing spiders, but smaller, the male measuring only two lines in length. It may be distinguished from *P. Petiverii* without difficulty, by the pale (in general dull whitish) hue of the tarsal and metatarsal joints of the legs, and it is much more hirsute than *P. pedestris*. It is found in the same localities, and in similar situations, though much less frequently.

GENUS DRASSUS, *Walck.* DRASSUS, *Blackw.* (in part).

The Genus *Drassus* comprises a number of dull-coloured spiders—chiefly brown of various shades—some of them of considerable size. They are found sometimes in tubular silken webs under stones, or behind old boards or wainscoting, as well as among moss and grass, or in fact under anything suitable for giving shelter and retaining a considerable amount of dampness in hot and dry weather. Unless disturbed the *Drassi* come abroad only at night. Their form is elongate and flattish, the legs of moderate length, tolerably strong, and generally armed more or less with spines. The caput is broader in front than in *Prosthesima*, and the spiders are very active. The eyes form two curved transverse rows, the foremost row usually the least curved and the convexity of its curve directed forwards, while that of the hinder row is directed backwards, thus enclosing a somewhat oblong, or oval, transverse space. The maxillæ are strong, a little curved towards the labium, and slightly impressed near the

middle. The labium is of a somewhat oblong-oval form. Eleven species are recorded as British, and of these, seven are found in Dorsetshire.

DRASSUS BLACKWALLII.

DRASSUS BLACKWALLII, *Thorell*, Syn. Europ. Spid., p. 179.

„ SERICEUS, *Blackw.*, Spid., Great Brit. and Irel., p. 111,
pl. vi., fig. 67.

The length of the male of this dark, sombre-coloured spider is four lines, the female being rather larger; it may be recognised easily by the abdomen being thickly covered with mouse-black, silky hairs, which give it a somewhat shining and greasy appearance; a few coarser, erect hairs are also mixed with the others. It is, so far as I am aware, exclusively a house spider, and is not rare at the Rectory, Bloxworth, where it is found roaming about at night on the walls of the entrance-hall, staircase, and passages, as well as in the outbuildings. I have met with it in several other localities in Dorsetshire, and have received it from various parts of England.

Drassus sericeus Walck, with which Mr. Blackwall supposed it to be identical, is quite another species.

DRASSUS TROGLODYTES.

DRASSUS TROGLODYTES, *C. L. Koch*, Dio Arachn., vi., p. 35, pl. 189, fig. 455, 456.

„ CLAVATOR, *Cambr.*, Ann. and Mag. N. H., Ser. 3, v., p. 171.

This spider is of a dark yellowish-brown colour, and the abdomen has often a shining, coppery hue imparted to it by its hairy clothing. The hinder part of the abdomen has a longitudinal series of indistinct, pale, angular bars on the upper side, and in front of these bars, on the fore part, are six short linear spots, forming two longitudinal, curved, parallel rows, of three spots each; the convexities of the curves are directed inwards towards each other. The eyes of the hind-central pair are placed obliquely, and very near to each other, nearer than in almost any other of our

native *Drassi*. The palpi are of moderate length, with very large digital joints; at the outer extremity of the radial joint is a strong apophysis, whose termination is somewhat dilated; and the palpal organs have a strong, prominent, and rather twisted, corneous process towards their inner side.

The length of the male is from three to four lines, and the female, which in colours and general structure resembles the male, is somewhat larger.

I found this rare and local spider in some abundance under stones near Pennsylvania Castle, Portland, in October, 1859, but all were immature. In the following year, when it should have been in a state of maturity, I could not find one. It has also occurred, though rarely, on the heath, and in woods at Bloxworth; and it has been sent to me from Scotland.

DRASSUS BULBIFER

DRASSUS BULBIFER, *Cambr. Proc. Zool. Soc.*, June, 1874, p. 386, pl. 51, fig. 13; and *Ann. and Mag. N. II.* Ser. 5, vol. 1, p. 111.

This is one of the most distinct and striking of our British species. Length 2 to 2½ lines.

Cephalo-thorax bright, deep reddish yellow-brown, marked with converging blackish lines. The legs are yellow, with the femora of the first and second pairs black. The abdomen is also black and hairy, with a large oblong-oval, deep reddish-brown, coriaceous, bare patch on the fore half of the upper side. This patch lies exactly within four white spots, which form a quadrangular figure; two other rather linear white spots in a transverse line occupy the hinder half. The spiracular plates are large, and of a clear pale yellow colour. The radial joint of the palpus has its projection, or apophysis, of a somewhat tapering form, but rather dilated at its extremity, somewhat like that of *Drassus troglodytes*. The digital joint is large and the palpal organs also large, prominent, simple, and almost globular in form, with one or two small corneous processes near their fore extremity.

An adult male, kindly sent to me by Mr. C. W. Dale, by whom it was found under a stone, at Durdledoor near Lulworth, in July 1877, is the first well-authenticated example met with in Britain. One other example only has been recorded, and is supposed to have been met with near Hastings.

DRASSUS LAPIDICOLENS.

CLUBIONA LAPIDICOLENS, *Walck.*, Ins. Apt. i., p. 598.

DRASSUS LAPIDICOLENS, *Blackw.*, Spid., Great Brit. and Irel., p. 116, pl. vi., fig. 70.

This is the most abundant, and widely dispersed, as well as the largest species of *Drassus* found in Britain; there is, however, great diversity in the lengths of a serie of examples. The male varies from 3 to 6½ lines, and the female is usually larger.

It is generally found under stones, and blocks of wood in waste grounds, heaths, and pastures, and lives in a tubular nest of thin whitish silk. I have found it very frequently under pieces of detached rock at Portland, and also among the *débris* of old walls and hedges. Its colour is usually a uniform dull-yellowish brown, with a darker elongate marking along the middle of the fore part of the abdomen; but some examples have a strong reddish or coppery hue, which, however, goes off after immersion for some little time in spirit of wine. The falcies are long, strong, and prominent, with a strong sharp tooth on the inner side of each, by which it may be easily distinguished from its congeners. The digital joint of the male palpus is remarkable for its narrowness, being scarcely broader than the rest of the palpus.

Full-grown examples are very bold and fierce, and will bite sharply when held in the fingers by the legs—not by *one* leg, for it will by a muscular jerk quickly relieve itself of one leg and so escape. I have never found any spider able to escape this way when held by *two* legs, probably because in this case the spider has not sufficient freedom of motion to get the purchase required for the necessary muscular effort of throwing off a leg. The jerk with which this is effected is very strong and easily observed; in fact, one may feel the free legs straining

strongly against the fingers, the jerk follows, and the imprisoned leg alone remains in your possession.

DRASSUS PUBESCENS.

DRASSUS PUBESCENS, *Thorell.*, Rec. Crit. Aran., p. 110.

„ „ *Cambr.*, Trans. Linn. Soc. xxviii, p. 439,
and Ann. and Mag. N. H., Ser. 5, I., p. 111.

A much smaller spider than *Drassus lapidicolens*, but bearing a very close general resemblance to it. It may, however, be distinguished, not only by its size, but by the smaller falcies, and by the different structure of the palpi and palpal organs; the radial joint of the palpus (in the male) is, in *D. lapidicolens*, much longer than the cubital, while in the present species it is little, if anything, longer; the digital joint is also shorter in *D. pubescens*.

The length of the male is $3\frac{1}{2}$ lines, the female being rather larger.

I have met with this very rare spider on two occasions only; once, several years ago, an adult male under a stone on Bloxworth Heath; and again during the past summer (June 16th, 1877) when I found another male, together with a female, under the dry crust formed on the heath in depressed places where turf had been cut and the water had evaporated, leaving a crust of vegetable matter and sand. This crust prevents the sun from parching the soil beneath it, and affords a cool shelter for many rare heath spiders, to search for which among the heather itself would be an almost hopeless task.

DRASSUS CRIMINALIS.

DRASSUS CRIMINALIS, *Cambr.*, Ann. and Mag. N. H. S. 4, Vol. 16, p. 224, pl. viii., fig. 3.

An adult female of this spider measured very nearly $3\frac{1}{2}$ lines in length. It is an obscure, but yet quite a distinct species. The whole of the fore part is bright yellow-brown, the cephalo-thorax bordered by a black line; and the abdomen is of a uniform dull mouse-coloured black, with some very indistinct, pale linear

spots, in two longitudinal curved rows along the middle of the fore part. The eyes of the hind central pair are of a somewhat sub-triangular, or irregular oval shape, placed rather obliquely, and almost, but not quite, contiguous to each other. Legs, 4.1.2.3.

A single example only was met with under a stone in a gravel pit on Bloxworth Heath, in May, 1874. It does not appear to have been yet found on the Continent.

DRASSUS DELINQUENS.

DRASSUS DELINQUENS, *Cambr.*, Ann. and Mag. N. II., s. 4, vol. 16, p. 245, pl. viii., fig. 4, and s. 5, vol. 1, p. 110.

A small but very distinct species. The male is about 2 lines in length, and the female $2\frac{2}{3}$.

The cephalo-thorax is of a dull, orange, yellow-brown colour, marked with converging, blackish, irregular lines; the legs and palpi are of a paler hue, and the abdomen is dull yellow-brown, with a longish, wedge-shaped, dark-brown, longitudinal, central marking on the fore part of the upper side, followed to the spinners by a series of distinct angular bars of the same colour, the vertices of the angles being directed forwards, but often broken. The digital joint of the male palpus is rather large, and the projection at its extremity on the outer side has its end rather dilated, something like that of *Drassus troglodytes*. Legs, 4.1.2.3.

I found an adult female under a stone on Bloxworth Heath in May, 1874; and, in June last, adults of both sexes in the same situation as *Drassus pubescens*. It is very nearly allied to a spider abundant in France—*Drassus minusculus*, L. Koch; but it is certainly different from examples of that species sent to me by Mons. Simon.

GENUS CLUBIONA, Latr. CLUBIONA, Blackw. (in part).

The spiders of this genus bear a great general resemblance to each other, being mostly of a yellowish-brown or red-brown colour of various depths, and pretty thickly clothed with sandy

greyish, or slightly slate-coloured, silky pubescence, concealing more or less, the real colour of the spiders; excepting in a few species, there are scarcely any, and often no distinct, markings on the abdomen. They differ from the three foregoing Genera of *Drassides*, in the position of the eyes, and in the form of the maxillæ. The eyes occupy almost the whole width of the fore part of the caput, forming a narrow, transverse, somewhat crescent shaped, or half-moon figure. The maxillæ are rather long, straight, considerably enlarged at their extremities, and without any transverse impression.

These spiders live chiefly in fine silken, tubular nests, low down among grass and other herbage, as well as often in folded leaves of trees and shrubs, and under old bark, or any other similar shelter.

Fifteen species have been found in Britain, and of these, fourteen have occurred in Dorsetshire.

CLUBIONA GRISEA.

CLUBIONA GRISEA, *L. Koch*, *Die Arachn.*, Fam. der Drassiden, p. 319, pl. xiii., fig. 205, 206, 207.

CLUBIONA HOLOSERICEA, *Blackw.*, *Spid. Great Brit. and Irel.*, p. 122, pl. vii., fig. 75.

The length of the male is about 4 lines, and that of the female nearly 6 lines.

The cephalothorax is dull brownish, covered with silky grey hairs; the legs reddish yellow-brown, armed with spines; and the abdomen (which is in this, and all others of the genus, of a comparatively narrow, slender form), is thickly clothed with short, grey, silky hairs. The palpi of the male have the radial apophysis of a very peculiar form. It consists of a strong, rather prominent, crescent-shaped projection, the anterior limb of which is curved, and longer than the other; between this and the palpal organs (lying close alongside the latter) is a straight sharp pointed projection with a strongish prominence towards the point, directed backwards, and giving it a barbed appearance

This can be only thoroughly explained by accurate figures drawn from several points of view. The radial apophysis, together with the structure of the palpal organs, which differ in each species, require very close and correct observation and comparison, to enable the collector to form any trustworthy determination of the very similarly coloured spiders of this genus. The females closely resemble the males in colours and general characters, and can be readily distinguished only by the form of the genital aperture.

Clubiona grisea is a rare spider among weeds and débris of various kinds in low damp places at Bloxworth, and in the neighbourhood, in spring and early summer. I have received it in large numbers from the fens of Cambridgeshire. It is also found in other parts of England, as well as in Scotland.

CLUBIONA TERRESTRIS.

CLUBIONA TERRESTRIS, *Westring*, *Aran. Succ.*, p. 395.

C. AMARANTHA, *Blackw.*, *Spid.*, Great Brit. and Irel., p. 123, pl. vii., fig. 76.

Very nearly allied to *Clubiona grisea*, but of a brighter yellowish, and red-brown hue, clothed with rather sandy greyish hairs; and the abdomen has a darker tapering stripe along the middle of the fore half. It may be distinguished readily by the form of the radial apophysis of the male palpus; in the present spider this is strong, of a crescent shape at its extremity, the anterior limb of the crescent being the strongest; and between the bases of the two limbs is a small dark prominence. The palpal organs have a strong, sharp pointed spine, curved round beneath their fore extremity, and projecting on the outer side.

Clubiona terrestris is generally distributed throughout Great Britain, and is not uncommon at Bloxworth and in many other localities in this county; it may be found among débris in hedges, and in angles of walls, concealed in a slender, somewhat tubular, silken web. The length of the female is rather over 4 lines, and the male is somewhat smaller.

CLUBIONA RECLUSA.

CLUBIONA RECLUSA, *Cambr.*, Zoologist, 1863, p. 8567.

The length of the male is about 3 lines, and the female is rather larger. In its general appearance it is very much like *Clubiona terrestris*, though in the form of the radial apophysis of the male palpus, it is more like *C. grisea*. The cephalo-thorax however has some dark vein-like markings upon it, which distinguish it at once from both those species. The radial apophysis is much more developed and prominent, and a strongly bent portion of it projects outwards, almost at right angles, from the joint itself.

Found in woods at Bloxworth and its neighbourhood, in summer time, enclosed within a small silken tube in the folded leaves of underwood and other low plants. I have also received it from several other parts of England. The females show a strong attachment to their eggs and newly hatched young; though this is also the case with some others of this genus, as well as with many other spiders. I have found the present spider completely enclosed in its tubular nest along with the eggs, or recently hatched young; these latter probably soon find their way out and disperse among the surrounding herbage; but by this time the parent spider has become dull and lethargic; and it may often be found in a semi-dried up, or collapsed state, still remaining in the folded leaf, where it would very probably shortly die, its office being performed, its family sent out into the world to shift for themselves, and its further existence of no use.

CLUBIONA LUTESCENS.

CLUBIONA LUTESCENS, *Westr.*, Aran. Succ., p. 395.

C. ASSIMILATA, *Cambr.*, Zoologist, 1862, p. 7953.

This spider is very similar in general appearance to *Clubiona terrestris*, to which it is also nearly allied.

The male is rather under 3 lines in length, and may be easily distinguished from *C. terrestris* by the form of the radial

apophysis, which differs from that of the spider mentioned, in having a longer and stronger crescent-shaped projection. The outer, or anterior, member of the crescent is much longer, stronger, and of a darker colour than the inner one, and is less pointed at its extremity, than that of *C. terrestris*; the palpal organs have also a strong corneous dark red-brown spine connected with them; this spine issues from near their base on the outer side, passes obliquely over them to the inner side, and so beneath and round their extremity, coming up again on the outer side and ending in a sharp prominent point in contact with some semi-transparent membrane. The falces are longer than those of *C. terrestris*. *Clubiona lutescens* is a rare species on bushes and trees in woods at Bloxworth and in the neighbourhood, in the summer time. I have also received it from Glanvilles Wootton, from Mr. C. W. Dale, and it has been found in some other parts of England.

CLUBIONA NEGLECTA.

CLUBIONA NEGLECTA, *Cambr.*, Zoologist 1862, p. 7955.

This spider is also very like *Clubiona terrestris*; and the male measures a little less than 3 lines in length. It may be distinguished without difficulty both from *C. terrestris* and other species very similar to it in general appearance, by the form of the radial apophysis, which has two members corresponding to those of *C. lutescens*, but the *upper one is much shorter*. The palpal organs have a long, slender, filiform, dark red-brown spine connected with them, quite different from any other species of the genus. This spine is remarkable from its tortuous course; it issues from the inner side of the palpal organs, curves round their extremity on the edge of the digital joint, and thence running back on the outer side, curves round again, and so up over the middle of the palpal organs, terminating in a very fine sharp curved point directed backwards close to their most prominent part.

Very rare, in similar situations at Bloxworth, and at the same season as *C. lutescens*. This species has not yet been found in any other part of England, but is met with in Germany as well as in France.

CLUBIONA PALLIDULA.

ARANEUS PALLIDULUS, *Clerck.*, Sv. Spindl., p. 81, pl. 2, tab. 7.

CLUBIONA EPIMELAS, *Blackw.*, Spid., Great Brit. and Irel., p. 124, pl. vii., fig. 77.

This spider is larger than either of the foregoing, and has a much greyer look owing to the greyer colour of its hairy clothing, though in reality the spider itself is darker, and has a less yellow-red hue; the forepart of the caput, particularly, is suffused with deep blackish brown, and the abdomen with dark reddish brown.

In the form of the radial apophysis *Clubiona pallidula* is something like *C. grisea*, but the palpi are altogether shorter, the digital joint is smaller, and the outer prominence of the apophysis far less developed.

The length of the male is nearly 5 lines, and the female is larger.

Frequent at Bloxworth, and in many other localities. It is found, especially in an immature state, under decayed bark on hewn timber, gate-posts, railings, and palings, as well as on standing trees. In such situations many examples may often be met with together, though each is generally enclosed in its own separate silken tubular chamber; the rapidity with which they escape from their dwellings when exposed, and drop to the ground, where security is quickly found among the herbage, is remarkable. It is adult during the summer months, and is generally distributed throughout the United Kingdom.

CLUBIONA CORTICALIS.

CLUBIONA CORTICALIS, *Walck.*, Ins., Apt. I., p. 593, and *Blackw.*, Spid., Great Brit. and Irel., p. 126, pl. vii., fig. 79.

This is one of the finest and most distinct species of the genus. The length of the male is very nearly 6 lines, and that of the female is slightly greater. The cephalo-thorax is reddish-brown, the legs and palpi pale; the abdomen is thickly clothed with hairs,

and has the central portion of the upper side, throughout its length, of a yellowish brown colour, with a long tapering dark-brown band along the middle of its fore part, beginning at the fore-margin; the hinder half of the abdomen has a series of obtusely angular, dark-brown bars along the centre, and the sides are also dark brown, the under side being yellowish brown. The digital joint of the male palpus is large, and the palpal organs, though excessively developed, are exceedingly simple, consisting merely of an enormous, short-oval, very prominent, smooth, corneous lobe, with a small, pointed, curved spine at its fore extremity. This lobe extends backwards far beneath the radial joint. The relative position of the eyes of the posterior row occasionally differs a little in the male and female of this spider; in respect to colour and pattern the two sexes are very similar.

Clubiona corticalis is occasionally found at Bloxworth under loose bark, on old, but growing trees, as well as in the interstices of old ivy stems on tree trunks. I have, on several occasions, found the adult male wandering about in rooms and outhouses in May, June, and the beginning of July. Some years ago I met with this spider in great abundance, under the decaying bark of old trees in Sir John Harpur Crewe's Park at Calke Abbey, Derbyshire; and it has also been met with in various other parts of England.

CLUBIONA HOLOSERICEA.

ARANEA HOLOSERICEA, *De Geer*, Mem. vii., p. 266, pl. 15, fig. 13-16
C. DEINOGNATHA, *Cambr.*, Zoologist 1862, p. 7957.

The length of the adult male is 3 lines, and the female is sometimes considerably larger.

In general appearance it very closely resembles *Clubionagrisea*, but it is of a more sandy-grey colour, and may be distinguished at once from all other British species by the great development of the falcies, especially in the males; these parts are very massive, and (looked at in profile) are greatly projected, and have a strongly arched outline; their colour is a rich, deep red-brown. The caput is much suffused with deep reddish-brown, the rest

of the cephalo-thorax being yellow-brown; the abdomen is reddish yellow-brown, and has a dark, irregularly edged, tapering band along the middle of the fore part, ending in a point about one-third of the length from the spinners; this marking is a good deal obscured by the greyish-yellow hairs with which the abdomen is clothed.

The palpi are short and slender; the radial apophysis is very like that of *Clubiona pallidula*; the digital joint is small, the palpal organs simple, and not greatly unlike those of the spider just named.

Found in several localities at and near Bloxworth; sometimes in considerable abundance among water weeds, rushes, and under heaps of the preceding year's cut-rushes, grass, and rubbish, in swampy places, in May and June; it has also been sent to me from several other parts of England and Scotland.

CLUBIONA BREVIPES.

CLUBIONA BREVIPES, *Blackw.*, Spid. Great Brit. and Irel., p. 127, fig 80.

The adult male measures about $2\frac{1}{2}$ lines in length, and the female about 3 lines.

This spider is of a dark reddish-brown hue, the fore part of the cephalo-thorax being the darkest; but, like most others of the genus, it is clothed with hairs, in the present instance of a dull greyish hue, considerably disguising its real colours. The form of the radial apophysis of the male palpus is very striking; it is large, rather tumid at its base, and has its termination, which extends over the base of the digital joint, of a sort of strong crescent form; the lower limb of the crescent is much the longest, and ends in a rather curved point, near which is a small angular enlargement.

Found not unfrequently on the lower branches of trees (especially oak trees), in woods, and also on underwood, at Bloxworth, in May, June, and the beginning of July. They may easily be obtained by beating the boughs, and bushes into a large umbrella, or entomological net. I have never yet met

with it in any other situation, though it is found in many parts of both Dorsetshire and Great Britain.

CLUBIONA CÆRULESCENS.

CLUBIONA CÆRULESCENS, *L. Koch*, Die Arachn., Fam. der Drassiden, p. 331., Taf. xiii., fig 213-215.

„ VOLUTA, *Cambr.*, Linn. Soc. Journ., xi., p. 553., pl. xiv., fig 3.

The length of the female is $3\frac{1}{2}$ lines, and that of the male somewhat less.

In general form and colours this spider is very similar to several of the foregoing; the cephalo-thorax is yellowish, clothed with dusky hairs, the legs and palpi paler, and the abdomen roddish-brown, rather densely clothed with fine yellowish-grey hairs; among several lesser differences, that of the form of the process connected with the genital aperture is very striking, and serves to distinguish it readily from all others known to me. This process is large, of a somewhat oval form, rather prominent, and has its posterior margin widened and somewhat convoluted, or turned upwards and slightly backwards. The male has the radial apophysis very strong and of a remarkable shape, not greatly unlike that of *Clubiona brevipes* in an exaggerated form.

An example of the female was found at Bloxworth several years ago, but had been, until lately, overlooked among a number of females of other species. I have also received it from the neighbourhood of Aberdeen. The male has not yet been found in England, but as I have received both sexes from Franco and Sweden, there is no doubt about its identity with *C. voluta* Cambr.

CLUBIONA COMPTA.

CLUBIONA COMPTA, *C. L. Koch*, Die Arachn. x., p. 129, Taf. 358, fig 841.

„ COMTA, *Blackw.*, Spid., Great Brit. and Irel., p. 128, pl. vii., fig 81.

This well-marked and pretty little species may be readily known from the distinctness of the pattern on the abdomen. The

male is scarcely more than 2 lines in length, the female being rather larger. The cephalo-thorax is of a reddish-brown hue, the legs and palpi yellowish brown, and the abdomen is yellow-brown, with (in the female) a dark reddish yellow-brown, longitudinal marking on the upper side, along the middle of the fore part, followed by a series of strong angular bars of the same colour on the hinder half. The male is much darker coloured, and the ground colour of the abdomen may be described as of a dark, slightly reddish-brown hue, with the angular bars formed of opposed, oblique, elongate-oval, pale yellow-brown, spots. The radial joint of the male palpus has a strong apophysis at its extremity on the outer side, and from its end issues a slender, fine pointed, strongly curved spine.

Abundant on the lower boughs of trees, as well as on underwood in spring and summer, in woods at Bloxworth and in many other localities. I have also often found it in autumn (but then immature) enclosed in a silken nest, and rolled up in a dead leaf on the ground; in this way they no doubt safely pass the winter in sheltered and protected spots.

CLUBIONA TRIVIALIS

CLUBIONA TRIVIALIS, *L. Koch*, *Dio Arachn.* x., p. 132, Taf 359, fig. 844-845.

The length of the male is about $1\frac{3}{4}$ lines; its form is very similar to that of several of the foregoing species and its general hue is yellowish, and reddish yellow-brown. The palpi are moderately long, the digital joint is large, but the palpal organs do not present any very distinctive point of structure; the radial apophysis, however, is very characteristic, being a strong production of the outer extremity of the joint, with a broad, obtuse, and somewhat rounded, termination.

The female is larger than the male, but resembles it in colours and other general characters.

Very rare, among heather and on furze bushes, at Bloxworth, in June and July. I have also met with it in Scotland, and in some other localities in England.

CLUBIONA PALLENS.

CLUBIONA PALLENS, *L. Koch*, Die Arachn., Fam. der Drassiden,
pl. xiv., fig. 234-236.

„ DIVERSA, *Cambr.*, Zoologist 1862, p. 7959.

Closely allied to *C. trivialis*, but smaller, and of a generally similar, though brighter hue. The two species may be easily mistaken for each other, until the radial apophysis of the male palpus is examined; this portion of structure, in the present spider, is long and rather strong, but instead of terminating in an obtuse, broad, roundish form, it tapers gradually to a bluntish point; the colour of this apophysis is deep reddish-brown. The abdomen is brightish yellow, mottled more or less thickly along the middle of the upper side, and towards the spinners, with bright brownish-red. The legs are of a dull straw colour, and the cephalo-thorax is of a very similar hue.

The female is rather larger, but resembles the male in colour and other general characteristics.

Rare among moss and heather roots on Bloxworth heath. I have also received it from near Glasgow.

CLUBIONA SUBTILIS.

CLUBIONA SUBTILIS, *L. Koch*, Die Arachn., Fam. der Drassiden,
p. 351, Taf. xiv., fig. 229-231.

„ PALLENS, *Blackw.*, Spid. Great Brit. and Irel., p. 130,
pl. viii., fig. 82.

The length of the male is rather less than two lines, that of the female about two lines.

The cephalo-thorax is yellowish-brown, strongly suffused with darker brown on the caput, and slightly tinged with olive-green in the thoracic region. The legs are pale yellowish-brown, and the abdomen is of a dull yellowish-red colour. The palpi are short, and the radial apophysis is rather long, tapering and pointed.

This small species is allied to *C. pallens*, *L. Koch*, and is not rare among water weeds, and rushes in marshy places at Bloxworth in

summer time, and in other localities in the neighbourhood. I have received it in great abundance from the fens in Cambridgeshire.

GENUS CHIRACANTHIUM, *C. L. Koch*. CLUBIONA,
Blackw. (in part).

This genus is nearly allied to *Clubiona*, but the species have much longer legs, with long prominent falces; and the general colouring of the abdomen, in the British species, is greenish-olive with bright rusty-red and yellow markings. The last, or digital joint of the male palpus is remarkable, possessing a strong, pointed, longer or shorter and more or less curved, spur, directed backwards from near its base; the first pair of legs are the longest, whereas in *Clubiona* the longest is the fourth pair. They are found on low plants in woods and on waste grounds.

Four species are at present known to be British, and of these two only have yet occurred in Dorsetshire.

CHIRACANTHIUM CARNIFEX.

CHIRACANTHIUM CARNIFEX, Fabr., *C. L. Koch*, *Die Arachn.*, Bd. vi.,
Taf. 184, fig. 438-439.

The length of the male is about four lines, and that of the female somewhat more. The abdomen is of a dull grass-green hue, mixed with yellow, and an irregular rusty-red band runs along the middle of the upperside. The falces are long, divergent and porrected. The spur at the base of the digital joint of the male palpus is sharp-pointed, strong, and very slightly curved; and the radial apophysis is slightly indented, or cleft, at its extremity. The digital joint is longer than the radial and cubital joints together, and has a strong angular prominence *near its extremity* on the outer side.

This handsome spider is not unfrequent in summer time, at Bloxworth among low plants in woods and on waste grounds, where it spins its somewhat tubular web among the leaves and blossoms. I have met with it in other parts of England, and it appears to be plentiful near Glasgow.

CHIRACANTHIUM NUTRIX.

CHIRACANTHIUM NUTRIX, *Westr.*, Aran. Succ., p. 378.

Non. Clubiona nutrix, *Blackw.*, Spid. Great Brit. and Irel.

About the same size as the foregoing, and nearly resembling it in form and structure. It may, however, be distinguished by the cephalo-thorax having no markings upon it; the abdomen also is of a brownish-yellow colour, tinged with red, and has, on the upper side, only an elongated, reddish yellow-brown marking along the middle of the fore part. The falcies are shorter and less divergent than those of *C. carnifex*. The digital joint of the male palpus is as long as, or even a little longer than, the radial and cubital joints together, the radial being nearly double the length of the cubital. The digital spur is less strong, but rather longer, and the angular prominence on the outer side is less developed, and further from the extremity of the joint than in *C. carnifex*; the radial apophysis is also stronger and longer, but is similarly cleft at its extremity, which is likewise a little enlarged.

An immature female was found by my son, Robert Jocelyn, among heather at Bloxworth, in September, 1877.

I had previously only met with this spider in Lancashire, and received it from Scotland. The adult male has not yet been found in Britain; the characters, therefore, of that sex above given, have been taken from examples sent to me by Dr. T. Thorell, from Sweden.*

GENUS ANYPHÆNA, *Sund.* CLUBIONA, *Blackw.* (in part).

This genus is also nearly allied to *Clubiona*, but differs in having a transverse fold in the integument near the middle of the under-side of the abdomen, concealing an opening into a special spiracular organ. The fore part of the cephalo-thorax is also narrower. Legs 1.4.2.3.

One species only has been found in Great Britain, and it is also abundant in Dorsetshire.

*Since the above was in press (September, 1878), I have met with both males and females, in the adult state, on fern and heather at Bloxworth, the former sex agreeing exactly with the Swedish examples.

ANYPHÆNA ACCENTUATA.

ANYPHÆNA ACCENTUATA, Walck., *Blackw.*, Spid., Great Brit. and Irel., p. 131, pl. viii., fig. 83.

The length of the male is rather less than three lines, that of the female being a little more.

The cephalo-thorax is of a yellowish-brown hue, with a broad, irregular, longitudinal, black band on each side. The legs and palpi are similar in colour, but marked and spotted with black. The sternum is yellowish, broadly bordered with black, and the abdomen is of a buffish yellow-brown, slightly tinged with reddish, and has, near the middle, two angular, black lines close together, the angles often broken, and thus giving a strong resemblance to marks of accentuation; the sides and hinder part are thickly marked with black, and a black band runs along the middle of the under-side from the fore extremity to the transverse fold above-mentioned.

The male is usually darker coloured than the female, and has three yellowish spots on the black, thoracic bands; the humeral joint of the palpus has a tuft of long, coarse, black bristles near its base on the under-side, and the radial joint, which is longer than the cubital, has some bristles of a similar kind on the upper side.

This very distinct, and easily-recognised spider is abundant at Bloxworth, and in the neighbourhood, where it is found on bushes, particularly furze bushes when in bloom, on trees, and occasionally under old bark. It is also fond of concealing itself in cracks or crevices of timber. I have frequently found many examples in slender webs between the head of a gate and the post, when the gate has been left for sometime unopened in the spring of the year. It is very active, and parts with its legs easily, if seized by one only at a time.

GENUS AGROECA, *Westr.* AGELENA, *Blackw.* (in part).

The maxillæ in this genus are straight, of moderate length and strength, not enlarged at their extremities, and only a little inclined towards the labium. The fore part of the caput is rather

narrow; the eyes are in two, not very long, curved rows (of which the anterior is the shortest and least curved), forming an oblong, somewhat oval, transverse figure, close to the insertion of the falcēs, *i.e.*, to the lower margin of the *clypeus*, which is thus almost obsolete. The tibiæ and metatarsi of the legs of the first and second pairs are armed, on their under sides, with two longitudinal parallel rows of long strong spines.

The relative length of the legs is 4.1.2.3.

Although included by Mr. Blackwall in the Family Agelenides, *Agroëca* is undoubtedly a Drassid genus, the terminal tarsal claws being two only, the spinners totally unlike those of the Agelenides, and the general form and structure of the spiders being also unmistakably like those of many others of the Drassides.

Two species only are known in Britain, and both of them occur in Dorsetshire.

AGROECA BRUNNEA.

AGELENA BRUNNEA, *Blackw.*, Spid., Great Brit. and Irel., p. 159, pl. x., fig. 102.

The length of the male is about 3 lines, that of the female $3\frac{1}{2}$ to 4 lines.

The colour of the cephalo-thorax is reddish yellow-brown, marked with blackish on the margins, and with some irregular converging lines on the sides. The legs and palpi are yellow-brown, furnished with hairs and spines, and the abdomen (which is hairy and slightly larger behind than in front) is yellow-brown with a somewhat golden tinge, and has a longitudinal dusky blackish marking in the middle of the fore part, followed by a series of similarly coloured angular lines; the sides are marked with blackish spots and markings.

The radial apophysis of the male palpus is rather strong, prominent, sharp pointed, and bent a little downwards at its extremity; the digital joint is large, and the palpal organs well developed and complex.

Found, though very rarely, among moss and grass in woods at Bloxworth. I have also lately received it from Mr. C. W. Dale, by whom it was found at Glanvilles Wootton.

This spider forms a beautiful little white, closely woven, silken, egg cocoon, of a somewhat pear shape truncated at the larger end, and fixes it by a short foot stalk to a grass stem, or to a rush or twig near the ground. The beauty, however, of these little cocoons soon gives way before prudential considerations, for they are quickly covered over with a thick coating of clay mixed with silk, making them look like little pellets of dirt casually stuck upon the stems and twigs. Doubtless this clay coating is intended both for concealment, as well as to secure a more even temperature for the eggs (clay being an excellent nonconductor of either heat or cold) and also to keep off the attacks of insect parasites. I do not think that I have ever myself seen a nest of this spider, but, according to Mr. Blackwall, it measures about 3 lines in diameter.*

AGROECA PROXIMA.

AGELENA PROXIMA, *Cambr.*, Trans. Linn. Soc., vol. xxvii, p. 415, pl. 54, No. 13.

In general appearance, form, and colours this spider is very like *Agroëca brunnea*; it is however smaller, the male measuring no more than one-fifth of an inch in length, and the golden tinge given to *A. brunnea*, from the colouring of the hairy clothing, is never present, so far as I have seen, in *A. proxima*; the pattern also on the cephalo-thorax and abdomen, though very similar, is in general much less distinct.

Some examples have a central, longitudinal, pale line on the fore half of the upper side of the abdomen. The radial apophysis of the male palpus is shorter and less prominent, and the digital joint is smaller; the palpal organs also differ in their structure from those of the preceding species.

*Since writing the above I have met with an egg cocoon of exactly 3 lines in diameter, and much shorter than those of the next spider, *A. proxima*. This I conjecture to belong to *A. brunnea*. See plate ii., fig. 7a.

The female resembles the male in colours and markings, but is rather larger.

Agroëca proxima is abundant among moss and heather, and among débris of all kinds in hedges and woods at Bloxworth and in the neighbourhood. In these situations I also frequently find little pear-shaped egg cocoons corresponding very nearly to those supposed to belong to *A. brunnea*, except in being less in diameter though longer in the bulbous part (plate ii., fig. 7).

They are likewise fixed in the same way to rushes or twigs of heath, grass stems, and rushes. Some of them may be found uncovered if met with before, or shortly after, the eggs are placed in them, but more commonly they are found plastered over as above described. I have often hatched the young spiders from these cocoons, but have never succeeded in keeping them alive longer than to be able to determine their genus. I have, however, but little doubt that those now referred to are made by *A. proxima*, though no parent spider has ever been detected even near a nest, still less in the act of forming it, or coating it with clay.

GENUS LIOCRANUM, *L. Koch.* CLUBIONA, *Blackw.* in part, + AGELENA, *Blackw.* in part, and + DRASSUS, *Cambr.* in part.

Liocranum is nearly allied to *Agroëca*, but the maxillæ are shorter, stronger in proportion, and very little inclined to the labium. The legs are very long, their relative length being 4.1.2.3., and the eyes are rather closely grouped in two nearly concentric curved rows. The front row is, excepting in one species, the least curved, and the convexity of the curve is directed backwards. Looked at in profile the cephalo-thorax slopes gradually forwards, from the beginning of the hinder slope to the eyes, which are placed very near to the lower margin of the clypeus. The legs have two parallel rows of long, strong spines beneath the tibiæ, and metatarsi of the first two pairs. Four species are at present recorded as British, and all of these have been found

in Dorsetshire. One species only (*L. domesticum*, Wider) attains any considerable size, the rest being very small.

LIOCRANUM DOMESTICUM.

CLUBIONA DOMESTICA, *Wid., Blackw., Spid., Great Brit. and Irel.*
p. 132.

The length of the male is about three lines, that of the female four to four-and-a-half.

The cephalo-thorax is yellow, tinged with brown, and the margins, as well as a rather irregular band on each side, are brownish-black. The legs and palpi are of a pale brownish-yellow hue, indistinctly annulated with brown. The abdomen is also dull-yellow, with a brownish tinge; it has, on the upper side, along the middle of the fore part, a black band, broader behind than in front, and following this band are several angular black lines; the sides also are thickly marked with black, and the underside is of a yellow-brown colour. The palpi of the male are long, the radial and cubital joints of equal length, but the latter is the stronger, and the former has a small, rather prominent, pointed, and slightly curved apophysis at its outer extremity. The digital joint is narrow-oval, and the palpal organs are small.

This spider is the largest of the genus, and is apparently very local. I have found it frequently under stones and detached pieces of rock partially embedded in the soil, near Pennsylvania Castle, Portland, in the autumn and late summer months; all were females, and at that time immature, and therefore we may conclude its time of maturity to be in the spring or early summer. It is a very distinctly marked spider, and not likely to be mistaken for any other species of this group, though at first sight it is not greatly unlike immature examples of *Tegenaria atrica*, which is abundant in the same locality and situation; it is also exceedingly active, and escapes with great celerity on being exposed by lifting up the stone. Its usual position appears to be with its legs spread out flat upon the under side of the stone, sometimes

under a thin filmy web, at other times quite exposed, the web having been perhaps torn off in raising the stone.

I have received both sexes, in the adult state, from Lydney in Gloucestershire; and very recently an adult female has been found near Sherborne by my nephew, Frederick Octavius P. Cambridge.

LIOCRANUM GRACILIPES.

AGELENA GRACILIPES, *Blackw.*, Spid., Great Brit. and Irel., p. 162, pl. x, fig. 104.

DRASSUS PRÆLONGIPES, *Cambr.*, Ann. and Mag. N. H., June, 1861.

The adult male measures but one-tenth to $\frac{1}{8}$ th of an inch in length, the female being rather larger.

The colour of the cephalo-thorax is dull reddish-yellow, with a black linear margin, and suffused, especially in irregular, converging lines on the sides, with dark brown tinged with olive. The legs are very long, particularly those of the first and fourth pairs, and the femora are broad, but of a somewhat flattish form; two parallel rows of longish spines are disposed longitudinally underneath the tibiæ and metatarsi of the first and second pairs; their colour is a clear coppery-yellow, with the femora, tibiæ, and metatarsi of the first and second pairs, as well as the tibiæ and metatarsi of the third and fourth, strongly suffused with blackish olive-brown.

The palpi are similar to the legs in colour; they are long, and the radial is larger than the cubital joint; the radial apophysis is short, blackish, slightly bent, and somewhat obtusely pointed at its extremity. The digital joint is small, and the palpal organs simple. The upper side of the abdomen is yellow, much suffused with dark olive-brown in front, and with a longitudinal series of very distinct, dark brown, angular bars on the hinder part; in some examples these bars might be more correctly described as yellow on a dark-brown ground. The adult female resembles the male in colours; but there is some variety in the brightness and distinctness of colouring in the individuals of a long series of both sexes.

Found near Lyndhurst, Hants, as well as among moss and heather on Bloxworth heath. It is adult in July, August and September, when I have occasionally observed the male running in sandy places in sunshine. In June, 1877, I met with it in abundance among star grass on the sand hills between Little Sea and the seashore near Studland; but all were then immature. This species does not yet appear to have been found on the continent, and it is but very recently that I have been able to identify, as undoubtedly synonymous, *Agelena gracilipes*, Bl., and *Drassus prælongipes*, Cambr.

LIOCRANUM CELER, *Sp. n.*

DRASSUS PALLIARDII, *Cambr.*, Trans., Linn. Soc. xxvii, p. 413
(exclude the synonyms there quoted).

LIOCRANUM GRACILIPES, *Cambr.*, l.c. xxviii. p. 440, in part.

An immature female of this spider measured about one line in length.

Although this spider was formerly considered to be only the immature form of *Agelena gracilipes*, Bl. (which it resembles very nearly in general colouring and appearance) the recent capture of numerous examples of that species leads me to believe it to be decidedly distinct, and hitherto undescribed. It may be readily distinguished by the posterior row of eyes being straight, and the interval between the eyes of each lateral pair being consequently greater. The cephalo-thorax has a similar ground-colour, but it is much less generally suffused with brown, the converging markings being black brown and much more distinct. In *A. gracilipes* there is also, on each side of the cephalo-thorax, an indistinct, pale, submarginal stripe, always more or less traceable, while in the present spider it is quite absent. The falces are marked like the cephalo-thorax.

Another very tangible, distinguishing character is furnished by the two anterior pairs of legs, *the tibiæ and metatarsi of which are immaculate*, while the femora and genua are slightly suffused with brown, as well as boldly and distinctly marked with some

large, dark blackish-brown patches; similar markings may also be traced, though in a much less degree, on the femora of the third pair.

The abdomen is black-brown, minutely mottled with yellowish, and has a series of fine angular lines of the same colour, on the hinder half of the upper side. The spinners are of a clear yellow.

The example above described was found on Bloxworth heath in the summer of 1866. It may be easily distinguished also from the true *L. palliardii*, L. Koch, by the characters above given.

LIOCRANUM CELANS.

AGELENA CELANS, *Blackw. Spid.*, Great Brit. and Irel., p. 161, pl. x., fig. 103.

This spider is also nearly allied to *Liocranum gracilipes*, Blackw., but may be easily distinguished by its generally brighter colouring and more distinct markings, though their general disposition is very similar. It is also rather larger, the male measuring about $1\frac{1}{2}$ lines in length and the female 2 lines. The cephalo-thorax is dark brown with the margins, and a distinctly defined narrow, central, longitudinal band, of a rather orange-yellow colour. The legs and palpi are reddish-brown, sometimes brownish-yellow; and the abdomen is of a deep rich brown, with a series of bright reddish-yellow, angular bars (or sometimes almost confluent, triangular markings) along the hinder half of the upper side. These angular bars join in with some less distinct, but similarly coloured, markings on the forepart; these latter generally consist of a longitudinal central bar, and one or two indistinct blotches on each side. The legs are shorter than those of *L. gracilipes*, but are similarly armed with spines beneath the tibiae and metatarsi of the first and second pairs. The radial apophysis of the male palpus is straight, and pointed at its extremity; the palpal organs are well developed and rather complex.

I have met with this spider, on two or three occasions only, on

Bloxworth heath, and in the same situations as *L. gracilipes*. It is also found, though rarely, in North Wales.

Mons. Eugéno Simon has sent me *L. celans* from Franco, where he informs me that it is an abundant species.

GENUS HECAERGE, *Blackw.*

This genus may be readily distinguished from all the rest of the genera of this family (excepting *Micaria* *Phrurolithus* and *Gnaphosa*) by the convexity of the hinder row of eyes being directed forwards; the anterior row being slightly curved in an opposite direction. The maxillæ are short, strong, straight, and inclined towards the labium. The cephalo-thorax is rather pointed in front; and the tibiæ and metatarsi of the first two pairs of legs are armed with two parallel, longitudinal rows of long, strong, sessile spines.

Two species are known as British, and both of them are found in Dorsetshire.

HECAERGE MACULATA.

HECAERGE MACULATA, *Blackw.*, Lond. and Edinbro', Phil. Mag. 3 Ser. iii., p. 193.

„ SPINIMANA, *Blackw.*, Spid., Great Brit. and Irel., p. 41, pl. iii., fig. 21.

The male of this spider is about one-fifth of an inch in length, and the female one-fourth. The cephalo-thorax is of a pale yellowish-brown colour, marked with a broad brown band along each side, and the margins are also marked with one or two fine lines of the same colour. The hinder row of eyes is curved, the convexity of the curve directed forwards, and that of the front row (which is less curved) backwards. The legs are pale yellow, marked with dark brown spots and lines, and the tibiæ and metatarsi dark brown; beneath these two last joints are two parallel rows of long strong spines, sessile, but moveable at will; and the sternum is pale yellow, with some dark brown marginal spots. The abdomen is pale yellowish-brown, suffused a little

with white in some parts; two broken, blackish lines begin at the fore extremity of the upper side, and enclosing a narrow, somewhat elongate, pointed space, unite about the middle, and continue to the spinners as a row of spots; towards each side of abdomen is also another curved longitudinal, broken, blackish band or stripe. The sides and under side are also spotted with black. The palpi are pale yellowish-brown; the radial apophysis is small, short, and pointed. The digital joint is not large; and the palpal organs are not very complex, but have a curved and pointed process, which extends to their fore extremity.

This is a very active and abundant spider at Bloxworth, and in many other localities both of Dorsetshire and England, among dead leaves and plants in hedge-rows; it is found, also, among heather, as well as in moss in damp places. This spider was included by Mr. Blackwall among the *Lycosides*, chiefly on account of the backward curve of the posterior row of eyes, which causes it to resemble very nearly some spiders of that family; but the possession of only *two* tarsal claws instead of *three* (the constant number in all *Lycosid* Genera) undoubtedly removes it from the *Lycosides*; and its true place is now generally agreed to be among the *Drassides*.

HECAERGE NEMORALIS.

HECAERGE NEMORALIS, *Blackw.*, Ann. and Mag. N. II., 3 Ser. viii., p. 441.

This spider is very nearly allied to the foregoing, and is also of the same size; it is, however, darker, and the markings are not so distinct; the most obvious distinguishing character lies in its rather dense clothing of long greyish silky hairs, which almost wholly conceal its markings. The palpi also and palpal organs differ a little in structure from those of *H. maculata*.

Two examples only have occurred in Dorsetshire, having been found in spring among heather on Bloxworth heath—it had previously only been found among dead leaves in woods in North Wales by Mr. Blackwall.

GENUS PHIRUROLITHUS, *C. L. Koch*. DRASSUS, *Blackw.*
in part.

The cephalo-thorax in this genus is oval. The maxillæ strong, enlarged at the insertion of the palpi, very broad at the base, and inclined towards the labium. The eyes are in two short, transverse, slightly-curved, concentric rows, the convexity of the curve directed backwards.

Only one species is recorded as British, and that one is tolerably abundant in Dorsetshire.

PHIRUROLITHUS FESTIVUS.

PHIRUROLITHUS FESTIVUS, *C. L. Koch*, *Die Arachn.* vi., p. 110, Taf. 207, fig. 511, 512.

DRASSUS PROPINQUUS, *Blackw.*, *Spid.*, *Great Brit. and Irel.*, p. 120, pl. vi., fig. 74.

A very pretty little shining, active, ant-like spider, with some brownish yellow-white markings and spots on the abdomen, whose ground colour is deep brown. The length of the male is one-ninth of an inch, the female being rather larger. The cephalo-thorax is brown, clothed with hoary hairs, some of which are disposed in converging lines. The legs are tolerably long, slender, and of a yellowish-brown colour, with the femora of the first and second pairs dark blackish-brown. The palpi are strong; the humeral joint has a prominence near its extremity underneath, clothed with hairs; the radial joint has, at its outer side forwards, a prominent apophysis of (comparatively) enormous size and curved form, its extremity being slightly cleft, or bifid (pl. 1, fig. 15). The digital joint is large and the palpal organs prominent, but not very complex.

Tolerably abundant at Bloxworth, Portland, and other localities in Dorsetshire; being found under stones, among moss and herbage, or debris in hedges, and marshy places; in Portland I have found it frequently under stones on the Weymouth side of the Chesil Beach, close to high water mark. It appears to be very abundant in the Fens of Cambridgeshire.



FAMILY ERESIDES.



DISTINGUISHING character of this family is the broad, somewhat quadrate cephalo-thorax, of which the caput is usually very convex, and much raised above the level of the thorax. The eyes form an enormous, nearly square figure, on the frontal part of the caput; the legs are strong, and the metatarsi of the fourth pair in the females have calamistra, while both sexes are furnished with a supernumerary spinning organ immediately in front of the ordinary spinners. Tarsal claws 3.

The spiders of this family are not very numerous, and most of them are tropical or sub-tropical. Mons. Simon has lately divided them into several genera. One only is represented in England, and that by but a single species.

GENUS ERESUS, *Walck.*

The four outer eyes form a large quadrilateral figure, occupying the whole of the front and sides of the caput, and the four others describe a small figure of the same form just within the straight line formed by the two foremost of the other eyes, and intermediate between them. The maxillæ are straight, enlarged and rounded at their extremities, and not inclined to the labium, which is rather long and pointed at its apex. Legs, 4.1.2.3.

ERESUS CINNABERINUS.

ERESUS CINNABERINUS, *Walck., Blackw., Spid. Great Brit. and Irel., p. 46, pl. iii., fig. 23.*

Length of the male about one-third of an inch.

The cephalo-thorax of this fine and showy spider is black with a short red tapering band on the hinder part of each lateral margin. The legs are short, strong and black, annulated with white, and furnished with red hairs on the femora of the second, third, and fourth pairs. The palpi are also black with white annuli, and the abdomen, which (as well as all the rest of the spider) is thickly clothed with short hairs, has the upper side of a bright scarlet red, with four large black spots, edged with white hairs, forming a square; and often between this square and the spinners are two other similar, but smaller, spots in a transverse line; the underside is black with a white spot near its hinder extremity, and the spiracular plates are clothed with red hairs.

The claim of this beautiful species to be British rested, up to a recent date, solely on the authority of the late Dr. Leach (Encyclop. Brit., Supplement to the 4th, 5th, and 6th editions). No reference is, however, given either to the finder or the locality, nor yet to the date of capture. An adult male example (now in my possession), one of two examples captured by the late J. C. Dale, Esq., of Glanvilles Wootton, a few years ago, on Parley heath, between Wimborne and Ringwood, and within the limits of the county of Dorset, is therefore the first, and as yet the only, authentic instance of its occurrence in England.†

Few spiders have been the occasion of greater differences of opinion among arachnologists, as to their systematic position, than this one. It has been placed by one or another in the most widely separated positions. By the majority it is placed among or near the *Salticides*. Conceiving, however, that it has no really true affinity with them, I have placed it here as a separate family immediately before the Genus *Dictyna* (Fam. Dictynides) with the most typical members of which it appears to me to have very much in common, both in structure and form.* One

† I have lately learnt that an adult male was taken at Bournemouth in 1874, and is now in the British Museum collection.

* In a recent publication, Dr. P. Bertkau, an eminent German arachnologist, assigns a very nearly similar position to *Eresus*. Verh. d. Nat. Ver. Jahrg. xxxiv., iv. Bd., p. 273.

species which I met with in abundance in Palestine (*Eresus acanthophilus*, Dufour) is also somewhat similar in habits to *Dictyna arundinacea*, forming an irregular snare among the twigs of low plants and shrubs, and living in a cornucopia kind of retreat.





FAMILY DICTYNIDES.



IN the typical group of this family (*Dictyna*, Sund., *Ergatis*, Blackw.) the caput is more or less considerably elevated, but in other groups not so much; in all it is compressed on its lateral margins, thus differing from *Eresus*; all the females have calamistra on the metatarsi of the fourth pair of legs, the males possessing only the supernumerary spinning organ in front of the usual spinners. The terminal tarsal claws are three in number.

GENUS DICTYNA, Sund. ERGATIS, Blackw.

The cephalo-thorax in *Dictyna* is, in most instances, considerably raised above the thorax in a very convex form. The falcēs, especially in males, are long, strongly curved, or excavated on their inner sides, and prominent in front near their base. The eyes are in two transverse curved rows, those of each lateral pair near together. The legs are rather short, 1.2.4.3., and have calamistra on the metatarsi of the fourth pair. The maxillæ are nearly straight, rather rounded at their extremity, and inclined towards the labium, which is large and of a somewhat sub-triangular form. Immediately in front of the ordinary spinners is the supernumerary spinning organ, described in the introductory chapter.

This genus comprises a group of small spiders, whose habit is to spin an irregular snare, consisting of numerous lines crossing and recrossing each other, among the blooms of the rush, or at the extremity of heather shoots, or in and among the leaves of other plants, as well as of low trees. The female lays her eggs in small cocoons within the snare, and carefully guards them until the young are hatched.

Five species are recorded in Britain, three of them being found in Dorsetshire.

DICTYNA ARUNDINACEA.

ARANEA ARUNDINACEA, *Linn.*, Syst. Nat. Ed. 10, p. 620.

ERGATIS BENIGNA, *Blackw.*, Spid. Great Brit. and Irel., p. 146,
pl. ix., fig. 93.

A small but very abundant spider, in the heath districts of Dorset. Almost every rush stem, and heather twig or bloom, has its extremity tenanted in spring and summer by this pretty, though soberly-coloured spider.

The caput is greatly raised in a rounded-convex form, and, with the rest of the cephalo-thorax, is of a deep brown colour. The fore part of the upperside of the caput is furnished with numerous white hairs, disposed in lines converging forwards. The legs and palpi are strong and of a brown colour, and the abdomen is yellow brown, clothed with greyish or white pubescence, and has a, sometimes irregular, deep chocolate brown, dentated band along the middle of the fore part of the upper side, followed by some broken angular bars of the same hue towards the spinners; the sides are brown mottled with white. The falces of the male are longer than those of the female, and of an irregular, bent form. The radial joint of the male palpus has a very small, short, slightly-curved, bifid-pointed process or spur, projecting at less than a right angle from near the base of the upper side; and the palpal organs have a somewhat corkscrew-shaped, pointed spine directed backwards, and almost reaching the articulation of the radial and cubital joints.

The length of the male is about one-eighth of an inch, and the female is rather larger.

If the snare of this little spider be torn open and the spider exposed to view, it makes no attempt to escape, apparently preferring to share in the general destruction of its home, rather than to find safety by deserting it.

DICTYNA UNCINATA.

DICTYNA UNCINATA, *Thorell.*, Rec. Crit. Aran., p. 82.

ERGATIS ARBOREA, *Cambr.*, Zoologist, 1862, p. 7960.

In general appearance, structure, colours, and markings this spider is very like its near ally, *Dictyna arundinacea*; it may, however, be distinguished without any difficulty, not only by its smaller size—the male measuring no more than one-tenth of an inch in length—but by a striking difference in the spur which projects from the upper side of the radial joint. In the present species this spur is long, nearly as long as the joint itself, rather tapering but also bifid or notched at its extremity (which is dark coloured, the rest being yellow-brown), and springs more nearly perpendicularly, and *quite from the base of the joint* instead of only from *near* it. The dark-brown longitudinal band also, on the fore part of the abdomen, is not dentated on its edges; and the transverse bars on the hinder half are more curved than angular, their ends generally terminating with an oblique spot, or short line, of the same hue. These transverse bars are often composed of two fine, approximated, dark-brown lines, frequently more or less obsolete, and seldom equally well represented in any two individuals. The female is rather larger than the male, and (like the female of the foregoing species) of a generally paler hue.

Found in tolerable abundance on trees and bushes at Bloxworth, where it makes its snare in and among the leaves and small twigs. More rarely I have found it in similar situations with *D. arundinacea*. It often forms its snare in the leaves of rank nettles growing under hedge-rows; and appears to be generally distributed in the South of England.

DICTYNA LATENS.

ARANEA LATENS, *Fabr.*, Syst. Ent., p. 432 (in part).

ERGATIS LATENS, *Blackw.*, Spid. Great Brit. and Irel., p. 149, pl. ix., fig. 95.

This spider is rather smaller than *Dictyna arundinacea* but a little larger than *D. uncinata*, the male measuring about one-ninth of

an inch in length. It may easily be distinguished from both those species by the prevailing hue, which is of a dark iron grey, caused by a dense grey pubescence on a nearly black ground. The abdomen has a broad, dentated, black band along the middle of the upper side, rather tapering at each end; and on the hinder part several whitish angular lines are sometimes visible. In the form of the falces, palpi, and papal organs there is a very close similarity to *D. arundinacea*.

Found frequently on bushes and underwood, particularly on furze bushes on the heath at Bloxworth, and in many other localities in Dorsetshire, when the furze bloom is full out in May and June. It is also common in numerous other parts of England.

GENUS LETHIA, *Menge*. CINIFLO, *Blackw.* (in part).

The spiders of this genus have not the very convex caput of *Dietya*, nor its peculiarly shaped falces. The maxillæ are strong, straight, enlarged at their extremities and inclined a little towards the labium, which is oblong-oval and truncated at the apex. The eyes are in two transverse curved rows.

The legs are rather short, and not very different in absolute length; their relative length is 1.2.4.3., or 1.4.2.3., the difference between 2 and 4 being very slight. There are calamistra on the metatarsi of the fourth pair, with the supernumerary spinning organs in front of the other spinners; and the terminal tarsal claws are three in number.

The spiders of this genus are all very small; six are at present known as British, four of them being found in Dorsetshire.

LETHIA HUMILIS.

CINIFLO HUMILIS, *Blackw.*, Spid. Great Brit. and Irel., p. 145, pl. ix., fig. 92.

The adult male of this pretty little spider measures about one-twelfth of an inch in length, and the female one-tenth. The cephalo-thorax is of a brown hue, marked with a marginal, and lateral converging, blackish-brown lines. The legs are yellowish-

brown annulated with brownish black. The abdomen is of a pale yellowish-brown on the upper side mixed with white, yellowish, and often with red-brown; it is divided longitudinally by a blackish tapering stripe, and on the hinder half there is a series of strong blackish angular bars, the extremities of which are sometimes a little enlarged. The sides of the abdomen are thickly reticulated with brown lines, and on the under side are two longitudinal bands of the same colour. The female resembles the male in colours and markings, but the ground colour is often much paler, and the pattern consequently more distinct.

The cubital joint of the male palpus has its fore extremity, on the upper side, produced into a short, pointed, curved, reddish spine, and the palpal organs are simple, with a coiled filiform spine connected with their surface.

This is an abundant species, on furze bushes when in full bloom on Bloxworth heath, and is also frequently found running, on warm sunshiny spring mornings, on iron railings on the Rectory lawn. It is also common throughout the southern counties of England.

LETHIA MENGII.

CINIFLO MENGII, *Cambr.*, Trans. Linn. Soc. xxviii., p. 441, p. 33, No. 7.

This spider is similar in size and form to *Lethia humilis*, but the male may easily be distinguished by its darker colouring and by the form and structure of the palpi and palpal organs.

The markings on the abdomen are also less distinct, and vary in their colour, being yellow-brown on a deep black-brown ground. The cubital joint of the palpus is also devoid of the characteristic spine found at the fore extremity of the cubital joint of *L. humilis*. The palpal organs are highly developed and prominent, with several processes, and a filiform spine is connected with their surface.

A single example only, found on the lawn railings at Bloxworth Rectory in early summer, has yet been recorded. It has not, so far as I know, been observed upon the continent.

LETHIA PUTA.

CINIFLO PUTA, *Cambr.*, Zoologist 1863, p. 8570, and Trans. Linn. Soc. xxviii, p. 440.

The length of the female of this minute species is one-fifteenth of an inch, being thus much smaller than either of the foregoing, from which it may readily be distinguished by its almost uniform yellow-brown colour; faint traces, however, of a pattern on the abdomen somewhat similar to that of *L. Mengii* may be seen on a close examination.

A single example only has yet been recorded in England, and this was found by myself at Bloxworth in 1861. It has been found in Prussia, and I have also received it from Franco.

LETHIA ALBISPIRACULIS.

LETHIA ALBISPIRACULIS, *Cambr.*, Ann. and Mag. N. H., S. 5, vol. 1, p. 109, p. xi., fig. 1.

This spider is very nearly allied to *Lethia puta*, but is rather larger, stouter, and darker coloured; it is also easily distinguished by the shining white, spiracular plates, beneath the fore extremity of the abdomen. The pattern on the abdomen is somewhat similar to that of *L. puta*, but the vertices of the pale angular lines on the hinder half of the upper side, as well as their extremities, are, each, marked with a minute tuft of white hairs, thus forming three longitudinal and nearly parallel lines of tufts.

The length is about one-thirteenth of an inch.

Three adult females were found under stones on the Weymouth shore of the Chesil Beach, Portland, on the occasion of the first meeting of the Dorset Natural History Society and Antiquarian Field Club, June 1st, 1875.

GENUS AMAUROBIUS, *C. L. Koch*. CINIFLO, *Blackw.* (in part).

This genus forms a passage from the present to the next family (*Agelenides*) in which last it has usually been included. The

character, however, of the abdominal markings, and the possession of calamistra and supernumerary spinning organs, as well as the structure of the ordinary spinners, appear to me to point to its present position as the most natural one.

The maxillæ are enlarged and rounded at their extremity, straight, but a little inclined to the labium, which is of a somewhat oblong-oval form truncated at the apex.

The caput is very slightly higher than the thorax, and its lateral margins are compressed. The eyes are in two transverse, curved rows; those of each lateral pair are separated from each other by a small but distinct interval, which is not very apparent at first sight, as they are seated on contiguous dark-coloured tubercles. Legs 1.4.2.3. Terminal tarsal claws 3.

The species at present known in Britain are three only. They are all of considerable size—one almost, if not (at least in some examples of the female) quite, the largest of our British spiders; and all three are found in Dorsetshire.

AMAUROBIUS SIMILIS.

CINIFLO SIMILIS, *Blackw.*, Spid. Great Brit. and Irel., p. 141,
pl. ix., fig. 89.

The length of the male is about 5 lines, and the female is (often considerably) larger.

The cephalo-thorax is of a reddish yellow-brown colour, darkest on the forepart of the caput. The legs are very similar in hue, with dark brown annulations; and the abdomen is dark brown with a broad, yellowish, longitudinal, band on the upper side, broadest in the middle; within the fore half of this band is a more or less distinct, large, oblong, dark blackish-brown marking, broadest at its hinder extremity, and generally broken, both longitudinally and transversely, by a pale interval. This is followed, by a series of brown angular lines, to the spinners,

which are short. The palpi and palpal organs are of complex structure; the radial joint is short and strong, but has several projections at its fore extremity; one of these, towards the inner side in front, is rather long, tapering, slender, curved, and terminates in a rather fine, dark, spine-like point.

This is one of our commonest house-spiders, being also abundant under old boards and stones, as well as in holes in gate posts and timber generally; it is likewise found in crevices of all kinds, especially in the cracks and joints of brick walls when the mortar has come out. Round the entrance to the tubular snare formed in such situations, the spider spins various rather irregular lines, some of which often present a somewhat radiating appearance, and are dressed with some flocculent adhesive silk; flies and other insects, becoming entangled in the outer lines, are immediately rushed out upon, seized, and drawn into the nest by the spider who lies in wait not far from its entrance. It is easy to bring the spider to the mouth of its dwelling by gently disturbing the snare with a grass mote. This is, at the moment, mistaken by the spider, for the entanglement of a fly; the ruse is, however, quickly discovered, and the spider retreats at once. Better still it is to drop a fly into the web, when the occupant, if at home, will not fail to make a speedy prize of it. After a little time the spider may be tamed, so far as to take a fly from the fingers, but at first it is necessary to keep out of sight, and to be very wary in respect to the amount of disturbance caused. It is the female only that is found in these situations; the male (when adult) lurks in similar places (though not in a web) by day, and by night roams about, and may be often found, after sunset, crawling on the walls of old dark rooms and passages during the autumn, winter, and early spring months.

Although abundant in England, especially in the southern counties, this spider does not yet appear to have been observed on the Continent; and several attempts to acclimatize it in Germany have hitherto failed of success.

AMAUROBIUS FENESTRALIS.

- AMAUROBIUS FENESTRALIS, *Stroem*, Beskr. ov. Norske Ins., 2 St.,
in Det Trondhiemsko Selsk Skrift iv., p.
362, pl. xvi., fig. xxiii.
CINIFLO ATROX, *Blackw.*, Spid. Great Brit. and Irel., p. 140, pl.
ix., fig. 88.

This spider is smaller than *Amaurobius similis*, but is very nearly allied, and bears a considerable resemblance to it in form, colours, markings, and structure.

It may, however, be readily distinguished, not only by its smaller size, the male measuring but $3\frac{1}{2}$ lines or thereabouts in length, but by its brighter and more distinct markings; the dark marking on the forehalf of the upper side of the abdomen is black-brown, less broken and much more compact, and the caput is also much darker. The radial joint of the male palpus bears a general resemblance in its structure to that of *A. similis*, but the projection on the inner side in front is not so long, less pointed, *i.e.*, somewhat obtuse, paler coloured, and of a less spinous appearance.

The female is larger, but resembles the male in colours and markings.

Found, but rarely, at Bloxworth, under stones and brickbats. It is much more abundant in the North of England, as well as in Scotland and Wales, but is not (so far as I am aware) found in houses or other buildings; or, at least, it occurs much less frequently in such situations than *A. similis*.

AMAUROBIUS FEROX.

- CINIFLO FEROX, *Walck, Blackw.*, Spid. Great Brit. and Irel., p.
142, pl. ix., fig. 90.

This is one of our largest spiders, the female often measuring upwards of six lines in length and the male about four-and-a-half to five.

It is found in cellars, under the floors of dwellinghouses, in out-houses, as well as (out of doors) under large stones and logs of

wood. It is generally distributed in England; but in the county of Dorset I have found it more abundantly under large pieces of detached rock near Pennsylvania Castle, Portland, than in any other locality. Like some other spiders it is apt to come out from its lurking place in those states of atmosphere which betoken the approach of rain. It is thus frequently to be seen crawling on the walls and seats of dilapidated churches, and has (I am told) received the name, in the neighbourhood of Plymouth, of "Old Churchman;" and it is looked upon there with a sort of superstitious respect, not unmingled, however, with ill-concealed, though unreasonable, disgust.

The whole spider has a black and rather sepulchral aspect; when looked at more nearly the cephalo-thorax is of a dusky-brown, tinged with dull yellowish, the caput being much the darkest. The legs and palpi are similarly coloured with, rather indistinct, sooty-black annulations; and the abdomen is dull brownish-black, with the greater part of the fore-half of the upper side dusky yellowish-white, divided longitudinally by two somewhat dentated, but often rather indefinite, curved bands, leaving a broad, central, longitudinal, pale band, pointed behind, and followed to the spinners by a series of dull yellowish-white, angular bars, of which the vertices are often broken and incomplete, and sometimes altogether wanting, or else represented only by small indistinct spots. This last variety constitutes the *Ciniflo mordax* of Blackwall.

The palpi and palpal organs of the male are an exaggeration, in their form and structure, of those of *A. similis* and *A. atrox*; but a very striking and distinctive character of these organs is a large lobe, the most protuberant part of which is white on the outer side, and in a dim light has a shining, and almost semi-luminous, appearance.

The adult female is a bold and powerful spider, and will bite the fingers fiercely when laid hold of. Sport, of a kind, has been furnished before now by ferreting out this spider from its tubular retreat; making use of the uncanny-looking black beetle, popularly known as the "Devil's coach-horse"—*Ocyrops olens*—for a ferret.



FAMILY AGELENIDES.

WITH few exceptions the spider of this family may be known, from the foregoing, by the greater length of their very hairy, and spiny legs; and especially by the length of the superior pair of spinners. The cephalo-thorax also (looked at from above) is usually much rounder behind, and the caput more produced forwards, as well as much more constricted on its lateral margins. The eyes are placed in two more or less curved transverse rows; they are not very large, nor greatly different in size, and those of the lateral pairs are not contiguous to each other. Their usual snare is a, more or less horizontal, sheet of web with one or more tubular retreats leading from it, and numerous irregular lines disposed about it. To this, *Argyroneta aquatica*, Latr. (not yet found in Dorsetshire, but abundant in ditches, pools, and ponds in some parts of England), is an exception.

The legs have no calamistra, and there is no supernumerary spinning organ. Tarsal claws three in number. Legs 4.1.2.3.

GENUS CRYPHOECA, *Thorell*. TEGENARIA, *Blackw*, in part + COELOTES, *Cambr.*, in part.

An obscure genus, of which two species only are regarded as British. One of these (not yet found in Dorsetshire) is included by Mr. Blackwall in the genus *Tegenaria*—*T. silvicola*, Walek.—and the other, described by myself some years since, provisionally, as a *Coelotes*, was found in Dorsetshire.

The maxillæ are straight, rounded at their extremity, sometimes inclined to the labium, which is short, broadest at the base, and truncated at the apex. Eyes in two slightly curved,

nearly parallel rows; and the tibiæ and metatarsi of the first and second pairs have two parallel, longitudinal rows of spines beneath them.

CRYPHOECA MOERENS.

COELOTES MOERENS, *Cambr.*, Zoologist 1863, p. 8572.

The cephalo-thorax of this rare spider is dull, pale yellowish-brown, marked with dark blackish margins and converging lines, and suffused with blackish at the forepart of the caput. The foremost row of eyes is the shortest and nearly straight, and the hinder one curves slightly from it, the convexity of the curve directed backwards. The eyes of the foremost row are very close together. The legs and palpi are paler than the cephalo-thorax, and the former have their tibiæ, tarsi, and metatarsi suffused with blackish. The maxillæ are strongly inclined to the labium. The abdomen is black, freckled with small pale spots or points; the upper side has a whitish spot on each side of the middle; each of these is followed by an oblong, slightly oblique patch of the same colour, after which come two other patches, on each side, rather more oblique and (like the former) opposed to each other, forming angular lines, interrupted at their apices; between these and the spinners are one or two short, rather curved, transverse lines of a similar hue.

The inferior spinners are longer and stronger than the superior; thus differing from those of the rest of the *Agelenides*.

A single example, not yet adult, and measuring only 1-15th of an inch in length, was found among low plants in Berewood near Bloxworth, in May, 1862, and still remains unique.

I am not convinced as to the correctness of its present systematic position, in which, however, I have placed it in accordance with the opinion of Mons. Eugène Simon, who has carefully examined the specimen here described.

GENUS COELOTES, *Blackw.*

The cephalo-thorax in this genus is of an elongate form, oval behind, broadish in front, and constricted (but not so strongly as

in some other genera) on the lateral margins of the caput, which is of a well rounded convex shape behind the eyes. The eyes are in two nearly concentrically curved rows, of which the anterior row is the shortest, and the convexity of the curves is directed backwards; they do not differ greatly in size, the fore-laterals being the largest, and the fore-centrals the smallest.

The legs are moderate in length, 4.1.2.3, strong, and furnished with hairs, bristles, and spines.

The falces are long, powerful, and very prominent, or gibbous, at their base in front.

The maxillæ are strong and rather of a curved form, broadest towards their extremity, where they are rounded on the outer, and obliquely truncated on the inner sides. The labium is oblong-oval, truncated at the apex, and about two-thirds of the length of the maxillæ.

One species only is as yet known in Great Britain, and that one has very lately occurred in Dorsetshire.

COELOTES ATROPOS.

DRASSUS ATROPOS, *Walck.*, *Ins.*, *Apt.* ii., p. 627.

COELOTES SAXATILIS, *Blackw.*, *Spid.* Great Brit. and Irel., p. 169, pl. xii., fig. 109.

Length of the male 5 to $5\frac{1}{2}$ lines: female rather larger. Cephalo-thorax dark reddish-brown, darkest on the caput. The legs are of a rather redder hue than the cephalo-thorax. The palpi (of the male) have the cubital and radial joints short; on the outside of the cubital joint is a large prominent apophysis with two angular prominences on its upper side. At the outer side of the radial joint is a pointed, and in front of it a shorter obtuse, apophysis.

The palpal organs are prominent and complex, with a curved, finely pointed spine on the inner side. The falces are strong, very prominent at the base in front, and like the caput in colour.

The abdomen is oval, rather broadest behind, yellowish-brown, marked, and spotted with black; and has a longitudinal, central, black band, tapering to a line at the spinners. On each side of

this band is a series of oblique, brownish lines, which often unite towards the hinder part and represent the ordinary angular lines.

Examples of this fine spider have very lately (October, 1878) been sent to me by Mr. C. W. Dale, by whom they were found near Lyme Regis in this county. It is usually found under stones, in woods and waste places; and is adult in the spring and summer months. It has occurred more commonly in North Wales, the North of England, Scotland, and in Wyckwood Forest, near Oxford. Mr. Dale has also (in 1877) sent it to me from Lynton, in the North of Devon.

GENUS *TEGENARIA*, Latr.

The spiders of this genus have the cephalo-thorax very broad-oval behind, and much constricted, laterally, on the margins of the caput. Falces powerful; legs long, well clad with hairs, bristles, and spines. Superior spinners much the longest, bi-articulate, and upturned. Mr. Blackwall describes the superior spinners of *Tegenaria*, and some others of the *Agelenides*, as *tri-articulate*; but the portion he considered to be a basal joint, is no more than a continuous, inarticulate, prominence of the abdomen itself. Maxillæ long, straight, broadest at the extremity, where they are rounded on the outer, and obliquely truncated on the inner side. Labium short, oblong, rather hollowed at the apex.

Most of the genus *Tegenaria* are house-spiders, or, at least, live in houses quite as much as out of doors. They spin a horizontal sheet of web, covered by numerous lines crossing each other in various directions, in the angles of walls, corners of unused rooms and collars, &c., with one or more apertures near the centre of the web leading to a somewhat tubular retreat, in or at the mouth of which they usually lie in wait.

Five species are at present known in Britain, and four of these have been found in Dorsetshire; the fifth species (*Tegenaria Guyonii*, Guérin, *T. domestica*, Blackw.) is the largest of the group; the extent of its outstretched legs often reaching four

inches. There seems to be no reason why it should not occur in this county. It is abundant in cellars, cupboards, and dark unused rooms at Oxford, as well as in the London district, and home counties. It has been called "The Cardinal Spider" owing to a tradition which connects it in some way with Cardinal Wolsey, during his residence at Hampton Court.

TEGENARIA ATRICA.

TEGENARIA ATRICA, *C. L. Koch., Blackw., Spid. Great Brit. and Irel., p. 165, pl. xi., fig. 106.*

This spider is almost, if not quite, as large in the body as *Tegenaria Guyonii*; but it is much shorter in the legs, and more distinct in its colours and markings. The length of the male is sometimes as much as 7 lines, and that of the female 9 lines.

The cephalo-thorax is pale roddish-brown, darkest on the caput, with a narrow, marginal, dark-brown line, and a broad band of the same colour, on each side of the central longitudinal line; these bands are crossed by darker lines following the normal indentations of the thorax. The legs are long, of a yellow-brown hue, tinged with reddish; those of the two first pairs, especially the femoral joints, being by far the deepest coloured. The abdomen is of a pale yellow-brown colour, thickly marked and spotted with deep brown, and leaving, on the upper side, a longitudinal series of pale, yellowish, angular lines, whose extremities are dilated into blotches. The vertices of the angular lines, on the fore part, are obscured by a longitudinal band of the same colour, which, however, in some examples, runs narrowly throughout the abdomen. The spots on the sides run into oblique lines, and those underneath form two parallel, longitudinal, but obscure bands. The sternum is yellowish, with a broad, marginal, black-brown band, spotted with large yellow spots, one opposite to the insertion of each of the legs. The middle joint of each of the superior spinners is blackish.

The radial joint of the male palpus has a large protuberance on the outer side, terminating in a prominent apophysis whose

extremity is obtuse and slightly enlarged. The digital joint is long, the fore extremity being much elongated or drawn out, though less so than in *Tegenaria Guyonii*. The palpal organs are complex, but want the long, curved, slender spine so observable in the last mentioned species.

Found abundantly in cellars, dark unused rooms, and cupboards at Weymouth, as well as beneath large pieces of detached rock near Pennsylvania Castle, Portland, where they spin their snares in the hollows and interstices formed by numerous blocks of stone thrown loosely together. Mr. Dale has also sent it to me from Glanvilles Wootton.

It appears to be rather a local spider, but is found in various other parts of England, though not abundantly. I have also received it from Glasgow.

TEGENARIA DERHAMII.

ARANEA DERHAMII, *Scopoli*, Ent. Carn, p. 400.

TEGENARIA CIVILIS, *Blackw.*, Spid. Great Brit. and Irel., p. 166, pl. xii., fig. 107.

This species is much smaller than *Tegenaria atrica*, the male being only from 3 to 4 lines in length, and the female 5 to 5½; it is also far more abundant, and more generally distributed, being in fact the common house-spider of Europe. It also extends its habitation to North America, New Zealand, Africa, St. Helena, and other exotic regions; to some, or all, of which places it has most probably been introduced in merchant vessels, among goods and packages. It is of a dull whitey-brown, or yellow-brown, colour on the abdomen, marked along the middle with a series of somewhat triangular, dark-brown, or sooty-black spots or patches, on each side of which are some rounder ones, also disposed longitudinally; these are sometimes united, and, with other spots and markings of a similar colour form the abdominal pattern. The cephalo-thorax is reddish yellow-brown, with blackish margins and lateral longitudinal bands; and the legs are also of the same colour, the metatarsi

and tarsi being the darkest, and the femora of the male very dark red-brown; the femora and tibiae are often faintly annulated with dusky blackish. The apophysis near the extremity, on the outer side, of the radial joint is blackish and pointed; the digital joint is similar in form to that of *T. atrica*, and the palpal organs are rather complex, with a strongish, curved, sharp-pointed spine near their extremity.

Found plentifully in all parts of the county, and of Great Britain generally, forming its snare in the angles of cellars and rooms, also behind old boards, in the corners of cupboards, and in old boxes, &c.

TEGENARIA CAMPESTRIS.

TEGENARIA CAMPESTRIS, *C. L. Koch*, Die Arachn viii., p. 34, Taf. 263, fig 615, 616.

This spider is smaller than *Tegenaria Derhamii*. The length of the adult male being only $2\frac{1}{2}$ lines, or rather more, and that of the female about $3\frac{1}{2}$; and it is found more frequently out-of-doors than in-doors.

It may be distinguished readily, not only by its smaller size, but by its more distinct colouring and markings, which are very like those of *T. atrica*, though with a paler and clearer ground; especially it may be known (the adult males at least) by the very large size of the digital joint of the palpus, and the greatly exaggerated development of the palpal organs. The penultimate joint of the superior pair of spinners is black, and the legs are annulated with blackish-brown. Adults of both sexes have been met with in early summer, as well as in the month of November.

I have met with it not uncommonly among heather, dead fern and other rubbish, on the sides of banks on Bloxworth Heath; also under heaps of brickbats and stones in the Rectory yard, as well as among casks and firewood in a woodhouse adjoining. Mr. Dale has sent me this spider from Glanvilles Wootton; and I have also found it in Hampshire.

TEGENARIA CINEREA.

ARANEAE CINEREA, *Panzer*, Faun. Ins. Germ, 4, 23, and *Thorell*,
Syn. Eur. Spid., 514.

TEGENARIA CICUREA, *C. L. Koch*, *Cambr.*, Trans. Linn. Soc.
xxviii, p. 535.

This spider may easily be known from most of its congeners by its smaller size, the male measuring 3 lines in length, and the female $3\frac{1}{2}$ to 4; and particularly by its plainer colouring, the abdomen being of a uniform, greyish, luteous colour without markings of any kind. The legs are not so hairy as those of some others of that genus, but more spiny. The palpal organs are complex and highly developed, with a strong, curved spine on the inner side, and a twisted, sharp-pointed spine on the outer side, both near their base.

Adult examples, of both sexes, were found in a dry, unused sewer at Bloxworth Rectory in the autumn of 1872. Their snares, spun in the angles of the sewer, resembled those of *Tegenaria Derhamii*; and their egg cocoons, of a flattish, lenticular form and white colour, were loosely attached by silken threads to the walls, where any inequality existed.

GENUS TEXTRIX, *Sund.*

This genus is nearly allied to *Tegenaria*, but may be distinguished by the caput being still more constricted on the sides, and rather more produced forwards. The spinners of the superior pair are also longer, and the hinder row of eyes instead of having the convexity of its curve directed *backwards*, has it, on the contrary, directed *forwards*, so that the position of the eyes assumes somewhat that of the genus *Lycosa*.

I am not aware that the spiders of this genus are ever found in houses, but generally in crevices of banks, and among loose stones of walls, and such like places; two species only are known as British, both being found in Dorsetshire.

TEXTRIX DENTICULATA.

ARANEA DENTICULATA, *Olivier*, Encyl. Meth. iv., p. 213.

TEXTRIX LYCOSINA, *Blackw.*, Spid. Great Brit. and Irel. p. 172,
pl. xii., fig. 110.

I have found this handsome spider, but rarely in any other locality than in Portland, where it occurs freely in the cracks and crevices of the blue-clay cliffs, and among rocks and stones, and in the walls of old stone quarries; its snare is similar to that of *Tegenaria*, consisting of a thin sheet of web, stretched horizontally near the crack or crevice in which the spider lives; and into this crevice is spun the tubular, or semi-funnel-shaped, passage through which the spider goes in and out. The colour of this spider is nearly black, with distinctly annulated, black and pale coloured legs; the upper side of the abdomen has a broad, longitudinal, dentated band, of a red and yellow colour, mixed with brown and blackish, running from the fore extremity to a little way above the spinners. The cubital and radial joints of the male palpus are furnished with long black bristles, and the latter joint has a strong, sharp projection at its extremity on the outer side. The palpal organs are highly developed and complex.

The length of the male is about 3 lines, and the female is somewhat larger.

TEXTRIX BOOPIS.

AGELENA BOOPIS, *Cambr.*, Zoologist 1863, p. 8571.

A very young example only of this spider has as yet been found. The greater (apparent) inequality in the size of the eyes, as well as a rather different disposition of them, led me to describe it some years ago as a new species. I have more recently had some doubts whether it may not be merely a very young example of *Textrix denticulata*, as I have since found, in reference to some other very young spiders, that in this stage the relative proportion of the eyes appears to be exaggerated,

and their disposition somewhat different. Until, however, I have had an opportunity of examining undoubted examples of *T. denticulata* in an equally immature stage of existence, its identity with the present spider is only conjectural. The example under consideration was found near Bloxworth, but I have no note upon the situation in which it occurred, and which has now escaped my recollection.

GENUS AGELENA, *Walck.*

Closely allied to *Textrix*, but the spinners are not so long though very similar, and the disposition of the eyes is quite different; the convexity of the curve of the hinder row being strongly directed backwards. The habits of spiders of this genus are also somewhat different, being found in open places among short undercover, such as furze and heath, and among the rank grass and weeds on the sides of banks, and under hedge rows. Three species are at present known as British, one only being found in Dorsetshire.

AGELENA LABYRINTHICA.

AGELENA LABYRINTHICA, *Clerck., Blackw.*, Spid. Great Brit. and Irel., p. 152, pl. x., fig. 97.

This is one of our largest spiders, with whose extensive, horizontal sheet of web, stretched among the rough grass, or among furze and heath, as well as among rank herbage on bank sides, and with a distinct funnel leading from it into the grass, or other herbage behind, everyone must be familiar.

The length of the male is 5 lines and that of the female 5 to 7 lines.

The spider itself is of a sombre blackish hue, with some greyish yellow-brown, angular bars in a longitudinal series on the upper side of the abdomen. The spinning tubes are placed underneath the last joint of the superior pair of spinners.

The cephalo-thorax is reddish-brown, with lateral, longitudinal, dark-brown bands; the central portion as well as the marginal

regions are covered with yellowish-brown hairs. The legs are reddish-brown, the tibiae and tarsi annulated with darker brown. The cubital joint of the male palpus has a strong, dark-brown projection at its outer extremity, and the radial joint has a longer, more pointed one at its extremity underneath.

The male and female, when adult, appear to live together, in their funnel-shaped silken retreat, in a state of great amity.

It is not easy to capture this spider; in fact, to make sure of it, the collector must come behind the snare very quietly and drop a small particle of a blade of grass, or other substance, among the intersecting lines which cover the horizontal web; this seems to be mistaken for a fly or some other insect, and seldom fails to bring the spider to the entrance of the funnel; the collector must afterwards thrust his hand suddenly into the herbage, and secure the opposite end of the funnel, and then, on the whole domicile being carefully drawn out, the tenant or tenants will be found inside the web. Unless some such precautions as above detailed be taken, the spider seldom fails to escape through the orifice at the hinder extremity of its funnel-shaped nest.

GENUS *HAHNIA*, C. L. Koch.

The genus *Hahnia* forms a group of small spiders of a short and rather robust form, with the long superior spinners of *Agelena*, and with the spinning tubes similarly situated beneath their last joints; it differs, however, slightly from that genus in the position of the eyes, but most remarkably in that of the spinners. These are upturned, rather divergent from each other, and form a single, transverse, nearly straight line, beneath the hinder extremity of the abdomen; the exterior spinner on each side—representing those of the usual superior pair—being the largest and longest.

Five species have been recorded in Britain, and all of them are found in Dorsetshire.

HAHNIA ELEGANS.

AGELENA ELEGANS, *Blackw.*, Spid. Great Brit. and Irel., p. 155,
pl. x., fig 99.

This is the largest of the British species, the male measuring 1-9th and the female 1-8th of an inch in length.

The abdomen is of a dark, blackish-brown colour, marked with a series of obliquely opposed, yellowish, oval, spots, forming angular bars along the middle of the upper side; the rest of the spider is of a brightish yellow-brown tinged with orange, the cephalo-thorax being marked with a longitudinal central, and lateral converging, black-brown lines.

I have met with this spider in holes, such as those made by the hoofs of cattle, in swampy places, as well as among moss and water weeds in similar situations, in the month of June, near Chamberlain's Bridge, between Bere Regis and Wool. It is in such holes, and in other depressions of the surface, that this spider spins its snare, which consists of a small, simple, horizontal sheet of web.

HAHNIA NAVA.

AGELENA NAVA, *Blackw.*, Spid. Great Brit. and Irel., p. 158, pl. x.
fig. 101.

„ SUBFUSCA, *Cambr.*, Ann. and Mag. N. H., June, 1861.

A very small, dark coloured, and rather hirsute spider; the male measuring about one line, and the female about 1-11th of an inch in length.

The cephalo-thorax is of a deep, glossy, brown-black; the legs and palpi are dark-brown, tinged slightly with yellowish; and the femora and tibiae of the first and second pairs are of a deeper hue. The abdomen is very dark-brownish or sooty black, the under part being rather paler; and the spinners have an annulated appearance, being dark yellow-brown with pale articulations. The palpi of the male are short, the cubital joint has a small prominent process on its outer side, near the upper part, and the radial

joint has on its under side a curved spine-like apophysis whose point is directed outwards. The digital joint is rather large, and the palpal organs simple, and almost surrounded by a long, slender, black, filiform spine. Some examples are of a deeper hue than others, and often of a slightly olive-greenish tinge. Specimens kept for some time in spirit of wine lose their black hue, and become rather like the next species.

I have found this spider in spring and early summer at Bloxworth, running in sunshine, on iron railings, walls, and posts; also among short grass and herbage in meadows, as well as under the crust left by the drying up of puddles on the damper parts of the heath. It may easily be distinguished from numerous other small blackish spiders, found in some of the above situations, and at the same season of the year, by the peculiar position of its spinners, as well as by its rather hirsute appearance.

HAHNIA MONTANA.

AGELENA MONTANA, *Blackw.*, Spid. Great Brit. and Irel., p. 157, pl. x., fig. 100.

The length of the male of this spider is 1 line and that of the female 1-10th of an inch, some examples however being smaller. It may be distinguished from *Hahnia nava* by its more prevailing yellow-brown colour, and less hirsute appearance.

The cephalo-thorax, legs, and palpi are yellowish-brown, the former with a blackish margin, and lateral converging lines of a dusky, blackish hue; the abdomen is dark brown tinged with yellowish and olive, and (when looked at closely) has its surface covered with minute dusky yellowish spots. Some of these, along the middle of the upper side, are arranged in a series of transverse angular lines, indicating more exactly the position of some obscure pale angular bars, while those on the sides are arranged in, either somewhat longitudinal, or oblique, pale lines.

The palpi of the male are very similar to those of *Hahnia nava*, but the digital joint is larger, and the cubital and radial apophy-

ses not so long, though apparently rather stronger in proportion. Also on the outer side, and rather beneath the humeral joint is a longitudinal row of several prominent black spines, or spine-like bristles, which I do not observe in *H. nava*; the palpal organs are much like those of that species, but more convex and prominent.

Found among moss and herbage in woods, and also among heather, at Bloxworth, in spring and early summer, and very lately received from Sherborne, where it has been met with by my nephew, F. P. Cambridge. This is, I have no doubt, identical with Mr. Blackwall's *Agelena montana*, found in North Wales; though, subsequently to the publication of his work (*Spiders of Great Brit. and Irel.*) I have received from him, under this name, numerous examples, of both sexes, of a larger and quite distinct species—*Hahnia helveola*, Simon (p. 72).

HAHNIA CANDIDA.

HAHNIA CANDIDA, *Sim.*, *Arachn. de France* tom. ii., p. 143.

Length of the male scarcely more than 1-18th of an inch. Female slightly longer.

This spider is nearly allied to *Hahnia montana*, but may be easily distinguished by its smaller size, and paler and more unicolorous appearance.

The cephalo-thorax, legs, and palpi are of a yellowish colour. The former tinged with brown, and marked with obscure converging lateral lines of a rather deeper hue. The palpi of the male are short, and the cubital joint has no apophysis; at least, I cannot discern any. The humeral joint has a longitudinal row of several small black spines, on the outer side rather underneath; the radial joint is prolonged behind into a longish, fine-pointed, tapering, curved apophysis, curving round outwards, and its point directed forwards on the outer side; the digital joint is very large; the palpal organs are simple, directed inwards, and encircled by a very fine reddish-brown spine.

The abdomen is of a short-oval form, of a dull yellowish-brown colour, marked above with a short, longitudinal, central,

obscure, dusky-brown line, and followed by a series of obscure angular lines of a similar hue. These lines are long, spanning the whole upper side of the abdomen, and each portion of the lines is rather curved. Spinners normal. The sexes are similar in colours and markings.

I met with adult examples, of both sexes, under stones near Pennsylvania Castle, Portland, some years ago, in the months of September and October, and have also received it from Scotland.

This is its first record as a British spider, as distinct from *Hahnia montana*, with which it was at first confused; the male is new to science; the female, only, having been described by M. Eugène Simon (l. c. supra).

HAHNIA HELVEOLA.

HAHNIA HELVEOLA, Sim., Arachn. de France, tom. ii., p. 139.

Length of the male, $1\frac{1}{3}$ rd of a line; the female being rather larger.

This spider may be distinguished from *Agelena montana*, Bl., by its larger size, paler colour, less distinct markings, and the long hairs on the abdomen and legs.

Cephalo-thorax, dull yellow-brown, rather elongate; legs rather paler, and furnished with numerous long coarse hairs. Palpi (of the male), similar in colour to the legs; the cubital joint has, towards the hinder extremity, and rather beneath the outer side, a small, prominent, somewhat bent, spine-like apophysis; and the radial joint, which is shorter than the cubital, has its outer side, rather underneath, produced into a longish, dark, pointed spine, curved upwards and backwards in a circular form, so that its fine point is in contact with the fore margin of the joint. The digital joint is large; the palpal organs very simple, and encircled by a fine black spine.

The abdomen is of a dull brownish-grey hue, clothed with longish, coarse hairs, and with a series of rather long, obscure, angular bars, of a deeper colour, along the upper part. Spinners normal, but rather longer than those of *Hahnia montana*. The sexes do not differ in colours and markings.

This spider has been confused with *Agelena montana*, Bl. I have found it (though rarely) at Bloxworth, among moss in woods, in spring and autumn; and have received numerous examples from North Wales from Mr. Blackwall, under the name of *Agelena montana*. This is its first record as a British spider.





FAMILY SCYTODIDES.

THIS family consists of a small group of, mostly exotic, six-eyed spiders, with longish weak legs, and a lame, halting mode of running. The cephalo-thorax is of peculiar form, its hinder part being large, very convex, and more or less elevated above the level of the fore part, and showing none of the ordinary divisional indentations, but sloping off gradually from the posterior to the anterior extremity, which is rather narrow; near this the eyes are placed in three groups, of two, contiguous eyes in each group, forming a triangle whose apex is in front.

The spiders of this group are generally found in houses, or other old buildings, and among ruins. Two genera only are known in Europe, one of these being represented in England.

GENUS SCYTODES, *Latr.*

The hinder part of the cephalo-thorax is remarkably elevated or humped; the thoracic region being greatly developed, apparently, at the expense of the caput, which is small. The posterior slope is vertical, and from the highest point the slope is rapid, but even on all sides, the ordinary grooves and indentations being nearly or quite obsolete. The lateral margins of the caput are compressed below the eyes, close to the fore extremity, which is truncated. Legs rather long, slender, furnished with hairs only—4.1.2.3.; terminal tarsal claws three in number, the two superior ones strong, the inferior very small. Maxillæ weak, pointed at their extremities, enlarged at the base, and much inclined towards the labium, which is of a sub-triangular form rounded or truncated at its apex.

On account of the number of its eyes *Scytodes* was placed by Mr. Blackwall in close proximity to *Dysdera* and other six-eyed spiders. The better opinion seems to be, that it is (as here placed) near the *Pholcides* and *Theridiides*, that its true position is to be assigned.

SCYTODES THORACICA.

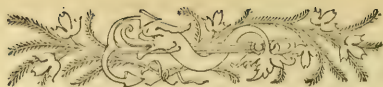
SCYTODES THORACICA, *Latr., Blackw., Spid.* Great Brit. and Irel.,
p. 380, pl. xxix, fig. 272.

Length of the female nearly 4 lines.

The cephalo-thorax is yellow, boldly, but rather irregularly, marked with black-brown. The legs are also yellow; in one example (an adult) the genua, both extremities of the tibiæ, and the hinder extremity of the metatarsi, were deep black-brown; in an immature example the femora and tibiæ were thinly spotted, or irregularly annulated, with a similar hue. The palpi are like the legs in colour and markings. The falcēs, sternum, maxillæ, and labium are also yellow, the falcēs marked in front with a blackish spot or patch. The abdomen is somewhat globular, of a paler and duller hue than the rest, marked with black spots and patches, forming two longitudinal, central, parallel lines, with some others slightly oblique, but nearly vertical, on the sides. Spinners short, and compact.

The palpal organs of the male of this spider (as well as of all other known males of this group) are exceedingly similar in form to those of *Segestria*, and the various genera of the *Theraphosides*, consisting of a pear-shaped corneous bulb, attached to the digital joint of the palpus by its larger end.

Until of late years, the claim of this spider to a place in the British fauna rested on the authority of Dr. Leach, who states (*Encyclop. Britt. Art. Annulosa*, Suppl. to the 4th, 5th and 6th Editions) that two females had been found near Dover. In 1861 I found an adult female in an outhouse at Bloxworth Rectory; and, more recently, an immature one at St. Alban's Hall, Oxford. It must, however, be regarded as one of our rarest spiders, and, in these northern latitudes, not likely to be often met with.



FAMILY PHOLCIDES.

THIS family consists of spiders possessing *eight* eyes, in the only known British genus, as well as of others, both European and exotic, with but *six* eyes. They may be known by their small, generally somewhat cylindrical abdomen, and excessively long slender legs, as well as by the prominence of the fore part of the cephalo-thorax near the falces. The tarsal claws are 3. The eyes of the eight-eyed species are placed in three groups—two lateral groups, each consisting of three contiguous eyes of tolerable size, and between these the third group of two other eyes, contiguous to each other and very small, is placed in a tranverse line. In the six-eyed species, the central group is wanting; they are found almost always in houses, ruins, or in buildings, of some kind; or, occasionally, under and among large stones and rocks, lying loosely in heaps. One genus only (having eight eyes) is represented in Great Britain.

GENUS PHOLCUS, *Walek.*

The thoracic region is round, with a large, deep pit, or indentation in the middle; the eyes are in three groups as above mentioned, and the legs exceedingly long and attenuated, their relative length being 1.2.4.3. Maxillæ long, narrow, enlarged at their base, tapering to their extremities, and curved round the labium, which is large, narrow at the base, broad in the middle, and rounded at the apex.

PHOLCUS PHALANGIOIDES.

PHOLCUS PHALANGIOIDES (*Fuesslin*), *Blackw*, Spid. Great Brit. and
Irel. p. 208, pl. xv., fig. 137.

Length of the male, 3 lines, and of the female 4.

This the only known British species of Pholcides, and it is, so far as I am aware, confined to the southern parts of England, over which it is generally spread. In unused rooms, lofts, and outhouses, at Bloxworth, it is exceedingly abundant; spinning large sheets of irregular webs in the corners and angles, adding to them year by year, until at last the whole ceiling becomes covered by them, hanging in large festoons, when, at length, they often break down by the weight of accumulated dust. This spider may be easily known by its small, almost cylindrical, but slightly constricted, abdomen, and very long, slender, hairy legs. The colour of the cephalo-thorax is pale brownish-yellow, with a longitudinal, central, brown band, broadest behind. The legs are pale brown, and the abdomen is very like the cephalo-thorax in colour, with a broken band of a darker colour along the middle of the upper side, and some similarly coloured spots along the sides. Its eggs are joined together by silken lines, in the form of a little ball, which it carries in its mouth until the young spiders are hatched. The movements of this spider, though tolerably quick at times, are generally lame and awkward; it has a remarkable habit (observed also in some other spiders of a widely removed family, *Epeirides*) of giving itself a peculiar, and rapid, vibratory motion, on a slight disturbance of its web, and sometimes on the mere approach of anyone towards it. This is done at times perhaps under the influence of fear, but at other times probably under an impression that some insect is getting into the web, and so, by way of a little help, to entangle it the more certainly; the web also being thus caused to vibrate, or shake very quickly to and fro; the exact mechanical means by which these vibratory movements are effected, I have never been able to observe satisfactorily.

Pholcus phalangioides, like some other widely separated spiders, overpowers its prey by spinning lines round it, turning it round and round rapidly with the legs until it is completely enveloped, and then carrying it off into the recesses of its snare. The following detail of an operation of this kind, which I had lately an opportunity of witnessing, seems to be worth recording:—

A fly of tolerable size became entangled among the outer lines of the snare; the spider immediately approached, but no nearer than just to reach the fly with the legs of the hinder (or fourth) pair; it then drew silken lines from its spinners, and, with the same legs, secured them to the fly; this was immediately followed by a rapid, alternate winding action upon the fly, effected also by the fourth pair of legs, occasionally assisted by one of the third pair. The fly was thus quickly and completely wound up, and at once carried off to the recesses of the snare in the claws of the fourth pair of legs. No bite was inflicted upon the fly, which possibly may have been thus kept a living captive for days to come in the spider's larder. Some species of *Epeirides* practise a very similar mode of securing their prey.

The palpi and palpal organs of the male are very remarkable. The radial joint is very large, tumid, and of an oval form; the digital joint small and roundish. The palpal organs are enormously developed, consisting of several strong, corneous, pale yellowish, and deep red-brown processes. With some modifications, a somewhat similar structure seems to prevail in all the species of this genus.





FAMILY THERIDIIDES.

THE spiders of this family may be characterized, generally, as of small size, but with the abdomen usually very large in proportion, and often, especially in females, globular, or nearly so, in form; the legs, too, are slender, but not often immoderately long. They are furnished with hairs, frequently with bristles, and, in some groups, with spines, and the terminal tarsal claws are three in number. The eyes are in two transverse curved rows, not very far distant from each other; but the four centrals nearly always form an almost square figure. Their snare consists of either a thin, horizontal sheet of web, with intersecting lines above and below, or else some irregular lines crossing and re-crossing each other, and so forming a kind of maze, in which their prey is entangled and their egg cocoons placed. The species are very numerous, and among them are some of the smallest known spiders, not exceeding in length the twenty-fifth of an inch. They are found in greatly diversified situations, sometimes almost exclusively in buildings; but usually on plants, shrubs, and trees; among grass and herbage of all kinds; under stones; among moss and dead leaves; on all kinds of soil; and in marshy, as well as in dry places. The spiders usually called Gossamer spiders, those, that is, to which are due the floating lines and white flakes of web, so noticeable, especially on a warm, bright September or October day, mostly belong to this family. At that season, as well as in the spring-time of the year, the young of these small spiders are exceedingly aeronautic in their habits.

GENUS EPISINUS, *Walck.* THERIDION, *Blackw.* (in part).

The general form and appearance of the only spider of this genus, found in Great Britain, are so remarkable, and so aberrant from the typical genera of the family, that no difficulty will be found in recognising it should it be met with; indeed, the difficulty is to retain it consistently in its present position. Few persons would at first sight consider it to belong to the Theridiides. In some respects it bears considerable resemblance to some of the *Thomisides*, especially to the spiders of a very remarkable group allied to that family.—*Stephanopis*, Cambr., found in Australia, where, however, no examples of *Episinus* have yet been found. In South America *Episinus* occurs in company with some other spiders distinctly intermediate between it and the Australian *Stephanopis*.

The cephalo-thorax is much the broadest behind, and of a flattish form, the thorax higher than the caput. The eyes are small and placed in the form of a segment of a circle, whose convexity is directed forwards. The relative length of the legs, which are without spines, is 1.4.2.3., 1 and 4 are long, 2 and 3 very much shorter; the length of those of the third pair not much, if at all, exceeding that of the spider itself. The maxillæ are moderate in length and strength, enlarged at the insertion of the palpi, obliquely truncated at their extremity on the outer side, and strongly inclined toward the labium, which is almost semicircular, though slightly pointed at the apex.

EPISINUS TRUNCATUS.

EPISINUS TRUNCATUS, *Walck.*, Ins., Apt. iv., p. 371.

THERIDION ANGULATUM, *Blackw.*, Spid. Great Brit. and Irel., p. 202, pl. xv., fig. 133.

The length of the female is one-seventh of an inch, and the male is rather smaller.

This spider may be known at once, from all others of the family, by the form of the abdomen, which is rather flattened

above and narrow in front, but widens gradually to the hinder extremity, where it is broad, very steep, and truncate, and has a small subconical prominence at each upper corner.

The legs are of a yellowish-brown hue, annulated with red-brown; they are rather slender, and the movements of the spider are slow and awkward. The cephalo-thorax has a broad, deep reddish-brown, central stripe, with some lateral markings of the same colour on a paler yellowish-brown ground.

The colour of the abdomen is dark yellow-brown, with an indistinct pattern, mixed with red-brown, pale-yellowish, and black on the upper side; round the lateral margins of which an irregular black line runs, as far as the beginning of the steep posterior slope, where it is continued transversely, and connects the two subconical prominences. The posterior slope is often marked with some strong, angular, black markings.

The palpi are slender; the digital joint of that of the male is of (comparatively) enormous size, and, with the palpal organs, which are complex, forms an unusually large, oblong-oval, club-like termination to the palpus.

This spider is not rare among heather, moss and herbage on Bloxworth Heath, where it may be found by tearing up the heather, and shaking out its contents on a sheet of paper, or by raking with a crooked stick under the heathy ledges and ridges. Mr. C. W. Dale has sent it to me from Glanvilles Wootton; it is also found in many other parts of England, and in North Wales.

I have not yet succeeded in finding it in any kind of web, or snare. It is adult during the summer months, and the young spiders, hatched in the latter part of summer, like numerous other spiders, live through the winter.

GENUS PHOLCOMMA, *Thorell*. THERIDION, *Cambr.*
(in part).

This genus possesses all the characteristics of the *Theridiides*; and except for one character—the peculiar disposition of the eyes—and it could scarcely be separated from the next genus (*Theridion*).

The eyes are very unequal in size, and are placed in three groups (almost exactly like those of *Pholcus*); three eyes of considerable size and contiguous to each other, form a group on each side of the fore part of the caput, and two minute eyes are placed, near together, in a transverse line between these two groups. The legs are short and without spines.

PHOLCOMMA GIBBUM.

ERIGONE GIBBA, *Westr.*, *Araneæ Succ.*, p. 279 (1861).

THERIDION PROJECTUM, *Cambr.*, *Zoologist* 1862, p. 7962.

An exceedingly minute, but very curious little spider. The male measures one-sixteenth of an inch in length, and the female is slightly larger. It is found, though rarely, among heather on Bloxworth Heath in April and May; and recently I have found it, on two or three occasions, under a verandah at the Rectory. Besides the position of the eyes, mentioned above, the male has a sort of sharpish-edged, eaves-like projection, all round just below the upper side of the abdomen, which is large and of a somewhat globular form. The cephalo-thorax and legs are of a red-brown colour, and the abdomen rather darker; the cuticle being somewhat coriaceous, and mottled thickly with paler, depressed points, or punctures, and clothed thinly with short, strong hairs. The abdominal projection is but slightly visible in the female.

I have also received this spider from the North of England, and several parts of Scotland, as well as from the Island of Serk.

GENUS THERIDION, *Walck.* THERIDION, *Blackw.*
(in part).

The spiders of this genus are mostly of small size, and have tolerably long, slender legs, furnished only with hairs and occasionally strongish bristles; their relative length is 1.4.2.3. The abdomen is in most cases large, and more or less globular in form, excepting in some males, in which it is either cylindrical,

or oval. The eyes are in four pairs, tolerably closely grouped together, the four central eyes forming either a square, or very nearly one; and those of each lateral pair are contiguous to each other; most of the species of *Theridion* are prettily marked, and sometimes rather richly coloured. The males are usually much the smallest, and often have, as above mentioned, a differently shaped, and always much smaller abdomen.

Eighteen species are known as British, thirteen being found in Dorsetshire.

THERIDION FORMOSUM.

ARANEUS FORMOSUS, *Clerck.*, Sv. Spindl., p. 56, pl. iii., tab. 6.

THERIDION SISYPHUM, *Blackw.*, Spid. Great Brit. and Irel., p. 179, pl. xiii., fig. 113.

This is a rare spider in Dorsetshire; the length of the male is about 1-8th of an inch, and that of the female 1-6th. I have met with it, on three or four occasions only, in Bere Wood, near Bloxworth, in its web spun among ivy on the trunks of trees. It is a very variable spider in its colouring, but the abdominal markings are peculiar, and similar in all the numerous varieties that have come under my notice. The abdomen of the female is proportionally very large, and exceedingly globular on its upper side. The prevailing colours are generally black, white, yellow-brown, and red; the characteristic markings consisting of some curved, parallel, narrow, and rather oblique, stripes on each side of the fore extremity, with some others rather divergent, behind them; the convexity of the curve being directed backwards.

I have met with this spider at Hursley, near Winchester, and it has also been found in some few other localities.

THERIDION TEPIDARIORUM.

THERIDION TEPIDARIORUM, *C. L. Koch*, *Blackw.*, Spid. Great Brit. and Irel., p. 180, pl. xiii., fig. 114.

This spider is considerably larger than the foregoing, the male measuring 1-5th and the female 1-4th of an inch in length; though

nearly allied, it is, however, of a much plainer colour, the hues seldom varying beyond brown of different shades, and light yellow-brown, deepening to reddish in the males. The characteristic pattern of *Theridion formosum* is generally observable in the present species, which is found, almost invariably, in green-houses, conservatories, and hothouses. But one instance is, I believe, known of its being found in any other situation; in that instance I found an adult male in the Rectory garden at Bloxworth, where there is neither greenhouse nor conservatory; nor is there one in the village; I look upon this, however, as an accidental occurrence. The spider may possibly have been brought from the nursery-gardens at Blandford, with plants, or flower pots, among the moss and other packing materials.

Theridion tepidariorum has an exceedingly wide range; being dispersed over the whole of Europe, as well as in various exotic regions, Australia and New Zealand; and it appears to be always found in such situations as I have mentioned. It has occurred in various parts of England, and I have also met with it in the Botanic Gardens, at Edinburgh.

Since writing the above I have found a second example of the male in the porch of Bloxworth Rectory.

Theridion riparium.

Theridion riparium, *Blackw.*, Spid. Great Brit. and Irel., p. 182, pl. xii., fig. 115.

This is another spider nearly allied to the two foregoing, but much smaller, and darker coloured than the last. The length of the male is $\frac{1}{8}$ th of an inch, that of the female rather more. The abdomen is of a rich, chocolate red-brown, with white markings; and it is also rather smaller than *Theridion formosum*; its habits are to spin its irregular snare among roots and grass stems under overhanging banks, and in this snare is suspended a rather long, cylindrical, silken tube, which the spider encrusts with particles of earth, bits of dead leaves and dry sticks; within this tube the female lives and forms her egg-cocoon. The pattern found in

the two foregoing species, of curved lines on the upper part and sides of the abdomen, is found also in this spider, and constitutes its chief characteristic markings.

A single example of the adult male was found under a heathly ledge near Poole, in the month of June. It is not uncommon in North Wales; and I met with it once in great abundance among the Austrian mountains near Ischl.

THERIDION SISYPHIUM.

ARANEUS SISYPHIUS, *Clerck.*, Sv. Spindl., p. 54, pl. 3, Tab. 5.

THERIDION NERVOSUM, *Blackw.*, Spid. Great Brit. and Irel., p. 180, pl. xiii, fig. 116.

This is one of the most abundant, and generally dispersed among British spiders; and perhaps also one of the prettiest. The length of the male is 1-7 th of an inch, that of the female $\frac{1}{4}$ th. It is found on most low-growing plants and shrubs, especially upon furze bushes and hollies; among the small shoots and branches of these it spins, in the spring and early summer months, an irregular maze of lines crossing and recrossing each other in every direction; many spiders often form their snares close to one another, and so make the whole plant, or bush, a mass of web. The egg cocoon is of a rounded form, and dull green colour, and is suspended beneath a pretty, dome-shaped, tent-like, retreat, or sometimes enclosed in a leaf, and carefully watched over by the mother. The little tent, and indeed other portions of the web, are usually covered, and sometimes almost concealed, by the débris of insects, bits of dead leaves, and other substances; these are stated by some authors to have been purposely placed there by the parent spider; but, in the absence of direct evidence to this effect, I am inclined to think that their presence, though unavoidable, is unintentional on the spiders' part.

Like the foregoing species the abdomen of the female is very large and globular; it is prettily varied with lines and markings of reddish, white, brown, and yellow; two broad,

longitudinal, bands of dark-brown, on the abdomen, are each crossed by several pale white, or yellowish lines. The longitudinal space between the bands is often of a red-brown hue. The cephalo-thorax has a longitudinal central, and two lateral bands of red-brown, on a reddish-yellow ground, and the legs are annulated with pale red-brown on a yellowish-brown ground colour. The male is not so distinctly nor so prettily marked, and its abdomen is small, and of an oblong form.

THERIDION DENTICULATUM, *Walck, Blackw.*, Spid. Great Brit. and Irel. p. 185, pl. xiii., fig. 118.

Length of the male about 1-9th or 1-10th of an inch, the female being rather larger.

This pretty little spider is generally abundant among trees and plants trained on walls; and may be also commonly found in any sheltered corner or crevice on the outside of houses, such as the angles of doorways, windows, porches verandahs, and in green-houses; in such situations it occurs abundantly at Bloxworth, and in many other localities in the county of Dorset, as well as throughout England, and also in Scotland. It is adult from May to July. The colours are simple dark-brown, mixed with black, white, or yellowish-white; and it may be easily known by a very distinct, dentated band of a pale colour (sometimes pure white) on a dark ground, running from one end to the other of the upper side of the abdomen; on the sides also there are some, slightly oblique, lines of alternate black and white (or whitish) spots. The legs are annulated with dark-brown on a pale yellowish-brown ground colour.

THERIDION FAMILIARE.

THERIDION FAMILIARE, *Cambr.*, Trans. Linn. Soc. xxvii., p. 418, pl. 55, No. 15.

Length of the male 1-12th of an inch, that of the female 1-10th.

This is a very near ally of the last spider, though it differs not only in being rather less in size, and in several small,

though constant, structural characters, but also in its colouring ; this is of a more or less bright reddish-brown, varied with white, brown, and yellowish markings ; the pattern is very similar to that of *Theridion denticulatum*, with a similar dark angular patch at the thoracic junction ; but the denticulations of the abdominal band are not so sharp, nor so well-defined ; and the whole colouring is constantly different from the sober brown, white, and blackish hue of that species. I have never found this spider anywhere excepting in lofts, unused rooms, and outhouses ; it is occasionally to be met with in such situations at Bloxworth ; and in the angles and in corners of the ceilings, or in other suitable positions, it spins its web. It is as yet unknown on the continent, and is adult in May, June, and July. An unfortunate cleansing and sweeping out, to which (unknown to me till afterwards) the chief haunt of this pretty little spider was subjected several years ago, has left it since then very scarce. As, however, it is now "strictly preserved" I hope to get up the stock again some day.

Since the above was written I have found (during June and July, 1878), several adults of each sex, and numerous immature examples in another outbuilding at Bloxworth Rectory.

THERIDION VARIANS.

THERIDION VARIANS, *Hahn.*, *Blackw.* Spid. Great Brit. and Irel., p. 188, pl. xiv., fig. 120.

This is a spider of much less frequent occurrence in Dorsetshire than *Theridion denticulatum*, though found in similar positions, as well as on plants and shrubs near dwellings. Its general colouring is altogether paler. The cephalo-thorax has a broadish, dark-brown, or blackish, central longitudinal band on a whitish-yellow ground, and a broad dentated one of a dull reddish-brown hue runs along the middle of the upper side of the abdomen the rest of the abdomen being brown, or yellowish-brown. The legs are annulated with black, on a whitish-yellow ground. The length of the male of *T. varians* is about 1-10th of an inch, and

that of the female $\frac{1}{4}$ th; some individuals, however, are smaller.

T. varians appears to be generally distributed throughout Great Britain, and is not unfrequent in greenhouses and conservatories, as well as in the other situations mentioned.

THERIDION TINCTUM.

THERIDION TINCTUM, *Walek., Blackw.*, Spid. Great Brit. and Irel., p. 109, pl. xiv., fig. 121.

Length of the male 1-12th of an inch, that of the female 1-10th.

Though nearly allied to *Theridion varians* this spider may easily be distinguished by a greenish tinge upon its general white and yellowish ground colour, as well as by the pattern both of the abdomen and cephalo-thorax; that on the abdomen is broken up, and a good deal confused by black markings, spots, and blotches; the legs also are longer, very slender, and more distinctly spotted and annulated [with black. The cephalo-thorax has a blackish, triangular marking, running from the hinder row of eyes to the thoracic indentation, where its finely-pointed apex terminates. So far as my own experience goes it is never found on walls, nor in the angles and crevices of doorways, &c., like *T. denticulatum*, nor in greenhouses like *T. varians* and *T. pictum*; but always on low trees and shrubs, or on the lower boughs of high trees. In such situations, especially on apple trees, it is abundant at Bloxworth and also at Glanvilles Wootton, and is adult at the end of May and in June. I have met with it also in Hampshire, and have received it from other parts of England. Mr. Blackwall has unwittingly made a mistake in his "Spid. Great Brit. and Irel.," p. 191, where he states that I had found this species "in uninhabited rooms."

THERIDION SIMILE.

THERIDION SIMILE, *C. L. Koch, Blackw.*, Spid. Great Brit. and Irel., p. 187, pl. xiv., fig. 119.

This is a smaller spider than either of the four last, the male measuring rather less than 1-12th of an inch in length.

The abdomen of the female is more than usually globular in form; its colour is brownish, mixed with white, and with a whitish, dentated band, bordered outside with dark-brown, along the centre of the upper side; this band gets narrower towards its hinder extremity, but has a conspicuous, triangular enlargement at its fore extremity, often of a whiter colour, and so more conspicuous than the rest; the colour of the cephalo-thorax is reddish-brown, darkest on the lateral margins and along the middle. The male is like the female, but generally smaller and darker coloured. It is very abundant in some seasons at Bloxworth, and in some other localities, among the heather, and on furze bushes, whence, when they are in bloom, numbers of this species may be obtained by beating the bushes into an umbrella placed underneath. I have also found it among underwood.

I have met with it in Hampshire and received it from Scotland.

THERIDION RUFOLINEATUM.

THERIDION RUFOLINEATUM, *Luc.*, Explor. en Algérie, Arachn., p. 260, pl. 16, fig. 10.

„ SPIRIFER, *Camb.*, Zoologist 1863, p. 8574, and Proc. Zool. Soc. 1872, p. 280.

Length of the male 1-9th of an inch, and of the female 1-7th. This is a rather larger spider than either of the foregoing; it has a broad, central longitudinal, and narrow, lateral marginal, reddish-brown bands on the cephalo-thorax; the intermediate spaces being of a dull yellowish hue. The abdomen has, on the upper side, a broad, deep, black-brown, and sometimes reddish, roughly dentated, and rather tapering, longitudinal, central band, bordered laterally with a whitish line; and on each side of the central band is a well defined, broad, whitish, or yellowish one, commonly mottled with rusty red; the sides are dark black-brown mottled with dull yellow-brown; this latter colour often forming two or more parallel, and slightly oblique lines. The under side is black; the sternum yellow-brown with a dusky black margin. The legs are brownish-yellow, annulated with

dark red-brown at the extremities of the joints. The digital joint of the male palpus is of a short, round-oval form, constricted at its extremity; the palpal organs are rather simple, but surrounded by the numerous coils of a very long, slender—almost hair-like—black spine, and covered with a row of long bristles issuing from the margin of the digital joint.

I have found this spider on furze bushes on Bloxworth Heath, and on the lower boughs of oak trees in Morden Park, in the month of June. The species appears to have a very wide range, being found in the South of France, and Algeria; I have also received it from Spain and Portugal, and have myself met with it in Egypt, Palestine, and Italy.

I first observed it, in England, on furze bushes on the Hursley Downs near Winchester.

THERIDION PULCHELLUM.

THERIDION PULCHELLUM, *Walck, Blackw.*, Spid. Great Brit. and Irel.

Length of the male 1-9th of an inch, and that of the female 1-8th.

This very brightly coloured, and pretty spider is allied to the foregoing, and resembles it a good deal in the character of its markings; but it is easily distinguished by its brighter colours, as well as by various structural features. It is not uncommon on rosebushes, and other plants and shrubs in gardens, as well as on the lower branches of trees and underwood. It has a broad, blackish, central longitudinal band on the cephalo-thorax, whose ground colour is yellow-brown. The legs are long, of a yellowish-brown hue, annulated with red-brown. The abdomen has a longitudinal central, bluntly dentate, or sinuous, dark red-brown band, bordered (most conspicuously in front) with yellow; the sides are light reddish-brown, and the under part is yellowish with a broad red-brown band along the middle. The digital joint of the male palpus is rather elongate-oval, and the palpal organs have a prominent process, thus differing remarkably

from those of *Theridion rufolineatum*. The egg cocoon is round, white, and may be often found secured by silken lines to the under side of a leaf, where it is watchfully tended upon by the female parent spider.

Theridion pulchellum is found in many localities, both in Dorsetshire and throughout the South of England, as well as in North Wales.

THERIDION BIMACULATUM.

ARANEA BIMACULATA, Linn., Syst. Nat. Ed. 12, T. 2, p. 1033.

THERIDION CAROLINUM, Walck, Blackw., Spid. Great Brit. and Ire., p. 192, pl. xiv, fig. 123.

The length of the male is 1-12th of an inch, and that of the female 1-10th.

The sexes of this spider differ exceedingly in form and colours. The female may be readily distinguished by a broad, central, tapering, longitudinal, well defined, yellow (or yellowish-white) band on the upper side of its very globular abdomen, the ground colour of which is a bright brownish-red. The abdomen of the male is far less round in form, being somewhat cylindrical, and often constricted across the middle; it is of a dark brownish-red colour, with the two obscure yellowish spots, near each other in a transverse line, on the fore-part of the upper side. The palpi are long, and are projected straightforwards as the spider runs about. The digital joint and palpal organs are, comparatively, of enormous size, and being held out in front of the spider as it runs along, give it a very singular appearance. The female carries her little round white cocoon, full of eggs, suspended beneath her by silken lines, and shows great concern if it be taken away from her, quickly getting possession of it again if she be able. *Theridion bimaculatum* is among our rarer Dorsetshire spiders; but I have found it, not unfrequently, at Bloxworth among weeds and rank herbage in hedges, and also among heather, as well as among strawberry plants while gathering

strawberries in my garden in June and July, by which time the female has generally deposited her eggs. It has also occurred at Glanvilles Wootton, and is at times very abundant on the sand hills near Southport, in Lancashire.

THERIDION PALLENS.

THERIDION PALLENS, *Blackw.*, Spid., Great Brit. and Irel., p. 184, pl. xiv., fig. 125.

Adult male length 1-14th or 1-15th of an inch, the female being rather larger.

This very minute, but common, spider is found in early summer on low plants, shrubs, bushes, and on the lower boughs of large oak trees.

The general colour is pale yellow, blotched with white, and with some dark, blackish markings. The male has a broad, central longitudinal, blackish band on the cephalo-thorax, and the fore-part (sometimes the whole) of the abdomen is black, or more or less suffused with it. The abdomen of the female is nearly globular; it is often without any dark markings, and is seldom so darkly, or so distinctly, marked as that of the male; when present, the markings are sometimes so arranged as to leave a large, whitish-yellow cross occupying the whole of the upper side. The egg cocoon is perfectly white, of a short pear shape, with several subconical prominences towards its larger end, giving it a very distinct and peculiar character; it is fastened by silken lines to the under side of a leaf, where it may be found after mid-summer, and very often (until the young are hatched) with the parent spider in close attendance. I find this pretty little cocoon frequently under the leaves of laurels in my shrubbery, and the adult males are often found running in sunshine on the upper bar of the iron railings fencing the lawn.

Theridion pallens occurs throughout the South and Midland Counties of England, as well as in Scotland and Wales, and is probably generally distributed.

GENUS NESTICUS, *Thor.* LINYPHIA, *Blackw.* in part.

The very long, slender, hairy legs, and straight maxillæ, clearly separate this genus from *Theridion*; while the absence of spines on the legs, and the length of the legs of the fourth pair, being greater than that of the second, distinguish it from the genus *Linyphia*.

One species only is as yet known in Britain, and that one is found in Dorsetshire, as well as in many other parts of England. Legs 1.4.2.3.

NESTICUS CELLULANUS.

ARANEUS CELLULANUS, *Clerck*, Sv. Spindl., p. 62, pl. 4, Tab. 12.

LINYPHIA CRYPTICOLENS, *Blackw.* Spid. Great Brit. and Irel. p. 224, pl. xvi., fig. 148.

Length of the male about 1.7th, and of the female 1.6th of an inch.

This is a spider seldom found excepting in cellars, dark, damp buildings, unused drains and sewers, and in natural caverns in the earth. The whole spider is of a dull yellowish, whitey-brown hue, with a somewhat semi-diaphanous appearance when alive. The cephalo-thorax is of a pale, yellowish-brown colour, with a distinct, blackish margin, and a longitudinal, central, similarly coloured band, strangulated, or constricted, near the middle. The abdomen is of a fainter colour than the cephalo-thorax, very convex on the upper side, where it is marked with some dusky black lines and spots, forming, chiefly, two, parallel, rows along the middle; the posterior markings often form a longitudinal series of angular bars. The digital joint of the male palpus has, at its base, an enormously developed, curved process, of an irregular, and somewhat concave form; the palpal organs are also greatly developed, and complex, with corneous processes, and spines.

Though probably this spider would be found, by searching, in many other localities in this county, I have as yet only met it at Bloxworth Rectory, and at Glanvilles Wootton. It must

not be confounded with another spider, inhabiting also dark buildings and cellars—*Pholcus phalangioides*. Fuessl. (supra p. 77). The far longer and slenderer legs, and the cylindrical abdomen of the latter spider, will distinguish it at a glance from the present species.

GENUS PHYLLONETHIS, *Thor*. THERIDION, *Blackw.*
in part.

This genus, included by Mr. Blackwall in *Theridion*, is separated from it by the more slender legs, a difference in the relative position of the eyes of the posterior row, and in the form of the maxillæ, which are broader towards their extremities. In the males there is also a greater, though in different individuals not always an equal development of the falcæ, which are widely divergent, and armed with a strong tooth towards their base on the inner side. Two British species only are at present known, both of them being found in Dorsetshire.

PHYLLONETHIS LINEATA.

ARANEUS LINEATUS, *Clerck*, Sv. Spindl. p. 60, pl. 3, Tab. 10.

THERIDION LINEATUM, *Blackw.*, Spid. Great Brit. and Irel., p. 176, pl. xiii, fig. 111.

The length of the male is 1·7th, and that of the female 1·5th, of an inch.

This is one of our commonest, as well as prettiest, spiders, occurring on various plants, bushes, and low trees; its general colouring is pale yellow, or whitish. The cephalo-thorax is of a straw-yellow colour, with a dusky, longitudinal, central, and black marginal lines; two longitudinal converging rows of black spots, sometimes dilated into irregular bands, occupy the upper side of the abdomen, which is thickly covered with cretaceous yellowish, or whitish spots; a row of alternate black and white spots encircles the hinder extremity, near the base of the spinners, in the form of a horse-shoe, whose open side is in front; and a longitudinal blackish band runs along the middle

of the under side. The form of the abdomen of the female is sub-globular, that of the male being oval; and the legs are long, very slender, and like the cephalo-thorax in colour. There is much variation in the markings of the upper side of the abdomen; in some females it is of an almost uniform whitish hue, with a few indistinct, veiny, dusky lines; some are as first above described; others, both male and female, have two longitudinal, bright carmine bands which unite at each extremity; and in others, almost the whole of the upper side is carmine; but in all cases the horse-shoe ring of black and white spots and the sub-abdominal black band are present. The sternum is yellow, with a black marginal, and longitudinal central lines.

The snare of this spider consists of numerous lines crossing and re-crossing each other among the small branches and leaves; the egg cocoon is secured by silken lines under the leaves, of which several are usually drawn together, and form a kind of tent for the protection of the eggs and young; the latter living beneath its shelter for some time after they are hatched.

It appears to be equally abundant throughout Great Britain, and, indeed, Europe generally.

PHYLLONETHIS INSTABILIS.

THERIDION INSTABILE, *Cambr.*, Trans. Linn. Soc. xxvii, p. 416, pl. 55, No. 14.

Length of the male 1-12th of an inch; of the female 1-10th.

Very much smaller than the last species, though bearing some general resemblance to it in colours and form. It may be distinguished among other characters by three, broken, black lines and markings on the abdomen, in lieu of the distinct black spots in *Phyllonethis lineata*; as well as by the absence, in most cases, of the ring of spots round the spinners; in some examples they are indistinctly apparent. The cephalo-thorax and sternum are immaculate, excepting a broadish, central, longitudinal, tapering, dark band on the former. The males have long and divergent falces very like those of *Phyllonethis lineata*, but some-

what differently armed. As yet this spider has only been found among coarse sedgy grass in a swamp near Bloxworth.

GENUS STEATODA, *Sund.* THERIDION, *Blackw.* in part.

The legs are stronger in this genus than in *Theridion*, and the other foregoing genera, and the eyes are placed on a rather projecting prominence at the fore part of the caput. The surface of the cephalo-thorax and sternum is often of a roughened, punctuose, or granulose nature, and the form of the abdomen is quite different from that of *Theridion*, with which it is united by Mr. Blackwall; in *Steatoda* the abdomen is oval, but instead of being excessively convex and globular above, it is, though considerably convex, rather flattened on the upper surface. Eight species are recorded as British, but four only have been found in Dorsetshire.

STEATODA BIPUNCTATA.

ARANEA BIPUNCTATA, *Linn.*, Syst. Nat. Ed. 10 i, p. 620.

THERIDION QUADRIPUNCTATUM, *Blackw.*, Spid. Great Brit. and Irel., p. 177, pl. xiii., fig. 112.

The length of the male is 1-6th, and that of the female 1-4th of an inch.

The cephalo-thorax is prominent in front, of a dark reddish-brown colour, and (together with the sternum) is covered with impressed points, or punctures. The general colour of the abdomen is a somewhat purplish, livid brown; a curved, marginal, whitish line runs round the fore extremity of its upper side; and down the middle there is a longitudinal, white stripe, consisting generally of a row, more or less connected, of spots and markings of different sizes, and crossed at its hinder extremity, some way above the spinners, by another transverse white stripe. All these white markings, however, vary considerably in form and extent, in different examples. The upper side of the abdomen has its central portion often much paler than the rest; and has also some deep red-brown impressed spots, or punctures, arranged in

two longitudinal diverging lines; the anterior pair of these spots being much more conspicuous than the rest. Beneath the fore extremity of the abdomen is a sort of socket, serrated or denticulated on its upper edge, and into this the hinder extremity of the cephalo-thorax fits, like that of *Asagena phalerata*. The under side is of a pale hue, margined with white, and marked with a central, longitudinal, deep red-brown band, divided in front by a white patch.

The legs are moderately long and strong; their colour is yellow-brown, with, at times, darker annulations.

The palpi of the male are long, the digital joint large, and the palpal organs prominent and highly developed.

The sexes are very similar in colours and markings.

This is often a very abundant spider in lofts, outhouses, stables, and in the windows of neglected rooms; it is also found under large stones and logs of wood. Examples may be met with all the year round, but its usual time of maturity is in the early summer months. It appears to be generally distributed throughout England.

STEATODA STICTA.

THERIDION STICTUM, *Cambr.*, Ann. and Mag. N. H., 3 Ser. vii., p. 432.

„ „ *Blackw.*, Spid. Great Brit. and Irel., p. 196, pl. xiv., fig. 126.

The length of the male is $1\frac{1}{4}$ lines; the female is rather larger.

This a much smaller and brighter coloured spider than the preceding, which it resembles very nearly in its general form, and somewhat also in the character of its markings. The male is much deeper and richer in colours than the female.

The cephalo-thorax and sternum (of the male especially) are strongly marked with granulations and punctures; and are of a bright, mahogany red-brown colour, deepening almost into black on the caput. The legs are of a bright orange-yellow, tinged

with red. The palpi of the male are long, strong, and similar to the legs in colour; the digital joints (together with the palpal organs) form a conspicuous object, as the spider runs with the palpi stretched in front at full length. The cubital joint is curved prominent above, and strongly clavate at its extremity; the radial joint is shorter, spreads out at its extremity, and is fringed, near the fore margin, with longish hairs; the end of the digital joint is rather drawn out, and has a conspicuous, prominent projection on its inner side; the palpal organs are prominent and complex.

The abdomen is yellow-brown, with the sides, and a patch on each side of the medial line of the upper part of the fore extremity, black; the upper part is also divided longitudinally by a whitish stripe; a similar stripe encircles the anterior extremity, and four deep red-brown impressed spots form a quadrangular figure near the middle. Beneath the fore extremity is a similar socket to that noticed in the foregoing species (*Steatoda bipunctata*).

This exceedingly rare, as well as distinct and pretty, spider has been found on several occasions after long searching, among moss and heather on Bloxworth Heath, but hitherto not in any other localities. Among the examples found one only has been a male. A variety of the female occasionally occurs, in which the abdomen is of a uniform and nearly black hue.

STEATODA CORACINA.

THERIDION CORACINUM, *C. L. Koch.*, Die Arachn., Bd. viii., p. 84, Taf. 276, fig. 655.

„ „ *Cambr.*, Trans. Linn Soc. xxvii., p. 422.

The length of the male is 1 line.

A single example only of this spider has, as yet, been recorded in Britain; this specimen I found among heather at Morden Park, near Bloxworth, in May, 1863. Its uniform, sooty-black colour, save the extremities of the legs, which are white, will render it easily to be distinguished when met with. The palpi are long; the cubital and radial joints very short, the

former protuberant above; the digital joint is large, obtuse-oval, and, with the palpal organs, which are simple, very club-like.

STEATODA GUTTATA.

THERIDION GUTTATUM, *Wider., Blackw.*, Spid. Great Brit. and Irel., p. 200, pl. xiv., fig. 131.

This is a still smaller spider than *Steatoda sticta*, but about the same size as *S. coracina*, the female measuring no more than 1 line in length.

In its general form, and the long palpi with their large digital joints and palpal organs, it is closely allied to both *S. sticta* and *S. bipunctata*, but it cannot be mistaken for either of them for a moment. Not only is it much smaller, but its abdomen is of a uniform, glossy, maroon-brown colour, marked on the upper side with a few bright, yellowish-white, spots disposed in three longitudinal lines, the central line being the longest. The cephalo-thorax and sternum are conspicuously punctuose.

I have found this very pretty little spider, not uncommonly among heather on Bloxworth Heath; and (more rarely) under stones near Pennsylvania Castle, Portland. It is adult in May and June, and in running the male holds its palpi stretched forwards at full length, like *S. sticta*. The hinder extremity of the cephalo-thorax fits into a kind of socket beneath the fore extremity of the abdomen, but the upper edge of the socket does not appear to be either dentated, or serrate.

GENUS EURYOPIS MENGE. THERIDION, *Blackw.* (in part).

The genus *Euryopsis* forms a group of small spiders separated from *Theridion* and *Steatoda* on several accounts. They are shorter, and proportionately stronger, in the legs, broader at the fore part of the caput, which is, however, very short, but also prominent in the ocular region; and the abdomen, although very short-

oval, and often globularly convex above, as well as slightly pointed at the spinners, is yet not so exceedingly convex, nor as elevated at the fore part of the upper side, as in *Theridion*. The palpi of the male are also much shorter than in *Steatoda*. The relative length of the legs is 1.4.2.3., and they are devoid of spines. Four species have been recorded as British, two only, as yet, having occurred in Dorsetshire.

EURYOPIS INORNATA.

THERIDION INORNATUM, *Cambr.*, Ann. and Mag., N. H., June, 1861.

„ „ *Blackw.*, Spid. Great Brit. and Irel., p. 196,
pl. xiv., fig. 127.

The length of the female is one line, the male being rather smaller.

This is a plainly, but distinctly, coloured spider; its cephalo-thorax and legs are of a reddish-yellow colour, the tibiae of the first two pairs of legs, as well as the extremities of the tibiae of the fourth pair, blackish. The abdomen is blackish, glossy, and of a roundish-oval form. The digital joints of the palpi of the male, with the palpal organs, form a largeish, round-oval club-like end; and the convex sides of these joints are directed towards each other. I have found this species, among heather, on Bloxworth Heath, and also under stones in the Isle of Portland. It is adult in the months of May and June.

EURYOPIS FLAVOMACULATA.

MICRYPHANTES FLAVOMACULATUS, *C. L. Koch*, Die Arachn. iii.,
p. 67, Taf. 95, fig. 220.

THERIDION FLAVOMACULATUM, *Blackw.*, Spid. Great Brit. and
Irel. p. 201, pl. xiv., fig. 132.

The length of the male is 1-7th of an inch, and the female rather larger.

The cephalo-thorax and legs are of a reddish yellow-brown colour, the legs being rather the lightest in hue. The fore-

central pair of eyes are further from each other than the hind centrals, and form a longer line. The abdomen is oval, pointed behind, and projects well over the base of the cephalo-thorax; it is of a dark, yellowish brown, or blackish colour, with some indistinct, pale brownish yellow markings, along the middle of the fore part; three large, rather oblique, dull yellowish patches form a longitudinal line on each side of the upper part, and a series of four or five, similarly coloured, smaller, opposed, rather oblique spots, along the middle of the hinder half, represent the ordinary angular bars; in front of them being four, brightish, red-brown spots (in the form of a quadrangle), edged with yellowish; these pale markings have a somewhat metallic lustre, from a few pale golden, scale-like specks upon them.

The palpi of the male are short; the cubital joint is roundish, and tumid in front; the radial joint very short, dilated in front, with a pointed apophysis on the outer side, directed backwards, its point almost in contact with the cubital joint; the digital joint is large, the palpal organs complex, prominent, with two rather conspicuous processes at their extremity.

This is an exceedingly rare spider. I have met with it (an adult male) on one occasion only in Dorsetshire—crossing a foot-path in Berewood, near Bloxworth, in the month of June, several years ago. It is equally rare in other parts of Great Britain.

GENUS ASAGENA, *Sund.* THERIDION, *Blackw.* in part

In this genus the legs are rather longer than those of *Euryopis*, and also stronger. The cephalo-thorax and sternum are covered with strong granulations; the former is of a somewhat different, and more depressed form, than that of some other genera of the *Theridiides*; and its lateral margins are furnished with small denticulations. The abdomen is broad-oval, not very convex above, rounded behind, rather hollowed out underneath in front, where there is also a roundish socket, margined above with small denticulations; into this socket the hinder extremity of the cephalo-thorax fits, much like that of several species of

Steatoda. A kind of squeaking, or stridulating noise, is said to be made, by the rubbing of the cephalo-thorax against the horny edges of the abdominal socket. I have never, however, heard it myself.

One species only is as yet known in Great Britain, and occurs occasionally in Dorsetshire.

ASAGENA PHALERATA.

PHALANGIUM PHALERATUM, *Panzer.*, Faun. Ins. Germ., 78, 21.

THERIDION SIGNATUM, *Blackw.*, Spid. Great Brit. and Irel. p. 205, pl. xiv., fig 135.

ASAGENA SERRATIPES, *C. L. Koch*, Die Arachn. vi., p. 98, Taf. 204, fig. 502, 503.

The length of the male is 1-5th of an inch, and the female is somewhat larger.

This is so conspicuously marked a spider that it cannot well be mistaken for any other known British species. The cephalo-thorax is of a deep blackish red-brown colour, and, besides the granulose surface, it has some short spines on the lateral margins. The legs are strong, red-brown, with some portions (chiefly the fore-half of the tibiæ, and the fore extremity of the femora) dark brown, or nearly black. The under sides of the femora and tibiæ, of those of the first and second pairs, are furnished with short spine-like denticulations.

The abdomen is brownish-black; its fore-extremity on the upper side, has a curved, sometimes bisected, golden yellow, transverse stripe, directly behind the middle of which is a small, somewhat linear spot; another short, curved, transverse, rather oblique spot of a similar colour occurs, on each side, about the middle; and another, elongated, central spot at the hinder extremity. Some little variety exists, in different examples, in the number, size, and form, of these yellow markings. The palpi are short, and of a dark red-brown colour; the radial joint is large and dilated in front; the digital joint very large, and the palpal organs complex with strong, prominent processes near their extremity.

Found, though very rarely, among heather, and under stones

at Bloxworth. It has also been met with occasionally in a few other localities in England, Wales, and Scotland.

GEN NOV., ROBERTUS.

Cephalo-thorax oval, considerably flattened above, and the normal indentations not strongly marked.

Eyes of moderate size, and not very unequal; they are placed in two very nearly straight, parallel rows almost close together; the convexity of their very slight curves being directed forwards; those of each lateral pair are seated on a tubercle, but are not quite contiguous to each other; and the four centrals form a square. The ocular area thus forms a transverse, elongate-oblong figure, whose transverse length is more than double its breadth, and occupies pretty nearly the whole width of the fore part of the caput. The height of the clypeus is equal to half that of the facial space.

Legs moderately long, tolerably strong, 1.4.2.3., fairly furnished with strongish hairs and bristles, and terminating with three claws, the inferior one very slender; metatarsi as long, or longer, than the tarsi.

Palpi terminate with a black, slightly curved, but apparently not denticulated claw.

Falces long, powerful, perpendicular.

Maxillæ rather long, straight, strong, and broad; with parallel sides, truncated obliquely at their extremity, which is rounded on the outer side, and strongly inclined to the labium.

Labium short, subtriangular, rounded at the apex.

Abdomen rather flattish, oval, well rounded behind, clothed thinly with longish, coarse, bristly, black hairs, and projects moderately over the base of the cephalo-thorax; the four outer spinners short, but of equal length.

ROBERTUS ASTUTUS, sp. nov.

Adult female, length 1 line.

The whole of this spider is of a pale, dull, straw colour; the

falces, maxillæ, labium, tarsi and metatarsi of the legs tinged with yellow-brown. Probably the example described (which is the only one I have yet found), had not long obtained maturity, in which case the colours would perhaps have become darker in a short time.

The profile line of the cephalo-thorax shows no difference in the even run, of the very slightly curved line of the thorax and caput, to the beginning of the hinder slope.

The four central eyes form a small square, and are all, as nearly as possible, equally separated from each other, the intervals being, just about, equal to a diameter of one of those of the posterior pair; those of each lateral pair are placed obliquely, and are nearly, but not quite, contiguous to each other, being also the largest of the eight; the interval between the hind-centrals is distinctly less than that between each of them, and the hind-lateral eye next to it.

This spider is unmistakably allied to some species of *Neriene*, but differs considerably from them. Among the chief differences are the position of the eyes, of which the posterior row has its convexity directed forwards; the greater strength of the legs; and the tarsi, equalling, if not exceeding, the metatarsi in length. On these, and other, accounts it is necessary to establish a new genus for it.

A single example was found under an old clod of turf near Woolbarrow, on Bloxworth Heath, in September, 1878.

GENUS NERIENE, Bl. in part.

This genus and the next (*Walckenaëra*, Bl.) comprise a vast assemblage of minute spiders, mostly black, or dark-brown, (varying to yellowish-brown in some species) with yellow-brown, reddish-brown, or orange-coloured legs. Among them are some of the smallest known spiders; the largest does not exceed 1-6th of an inch in length; while the smallest is no more than 1-25th. There appears to be no sufficient grounds for merely separating the genera *Neriene* and *Walckenaëra*, of which this group is made up; while yet it is impossible to combine them, satisfactorily, in

one group, as is now done by most Arachnologists, under the generic name *Erigone*. The time approaches when a revision of the whole group will be a necessity. I have myself been, for a long time, collecting notes for such a revision, which is delayed, chiefly, by the difficulty of obtaining the females of very many of the numerous species. Here, therefore, it must suffice to catalogue them within the generic limits adopted by Mr. Blackwall, some years ago, in his work on British Spiders.

With regard to the generic characters of *Neriëne* it is enough, here, to mention that the eyes are in two curved rows, forming a transverse, oval, or oblong-oval figure; or in four pairs, of which the two lateral, and the fore-central pairs have their eyes, respectively, contiguous (or very nearly so) to each other. The legs are generally slender, of moderate length, relatively 1.4.2.3., or 4.1.2.3., furnished, almost always, with hairs and slender bristles only. In a few instances some strong bristles or fine spines are present, and in one instance there are some decided spines on the legs of the first two pairs. The legs of the male sometimes differ, in their relative length, from those of the female. The maxillæ are short or of moderate length, tolerably strong, in one group greatly enlarged where the palpi are inserted, and, generally, strongly inclined towards the labium, which is short and of a somewhat semi-circular form. Some few male spiders, of this genus, have eminences, or protuberances on the caput; but in no case are the eyes placed upon, or around the eminence; others have the caput generally raised, in a more or less rounded, or convex form, while others have merely the ocular area a little projecting; and, excepting in a few cases, there is, in the females, but little difference, when looked at sideways, in the level of the thorax and caput. In fact, one of the great obstacles in the way of a satisfactory subdivision of these small spiders into genera, is the *great similarity* of the females to each other; while the males, generally, differ so considerably, in several structural features, as to make it quite easy, not only to distinguish the species, but to indicate several good generic groups among them.

The spiders of this group are found on low plants, bushes, and

branches of low trees, among grass, moss, and heather; also under stones, and loose bark. When young they are among the most frequent of gossamer spiders, and may often be taken while floating in the air upon their silken lines. The snare of these spiders is a thin horizontal sheet of web stretched among the leaves and shoots of plants and trees, or among the blades and stems of grass, as well as over small cavities in the surface of the ground. Over, under, and around this sheet of web are some other lines crossing and recrossing in various directions. These lines no doubt serves to entangle small insects and precipitate them upon the web, where they are quickly seized by the spider, who lies in wait, either beneath in an inverted position, or else close by. Up to the present time *eighty-three* species of *Neriene* have been recorded in Britain, and of these *fifty* have been found in Dorsetshire.

The remarks made upon each of the following species must be taken to apply to the males only, excepting where otherwise expressed. As a general rule the difference between the males and females of these little spiders consists of the larger abdomen of the latter, and the absence of any elevation or eminence that may exist on the caput, or thorax, or any special development of the falces of the male; the colours in the two sexes are, almost always, nearly alike.

NERIENE ATRA.

NERIENE ATRA, *Blackw.*, Lond. and Edinbro., Phil. Mag., 3 Ser., iii., p. 195.

„ LONGIPALPIS, *Blackw.*, Spid. Great Brit. and Irel., p. 274, pl. xix., fig. 188.

The length of the male is about 1-10th of an inch; that of the female a little more.

This, and the next two, are among the most easily identified species of the group. The caput is considerably raised, the falces are protuberant near their base, and are armed, in front, with

strongish prominent denticulations; the cephalo-thorax also has a marginal row of similar denticulations. The palpi (of the male) are long and slender, the third (or cubital) joint has a strong and nearly perpendicular, pointed spur beneath its fore extremity; and the second (or radial) joint is broad, obtuse, and rather rounded at the, somewhat produced, fore extremity of the upper side. The colour of the cephalo-thorax is a rich glossy, brown-black; the legs reddish-brown, and the abdomen black; the humeral (or longest) joint of the palpus (in all the three species) is armed with denticulations; and, in the present one, there is frequently a longitudinal, central row of very small, sharp denticulations on the caput.

This is an abundant spider in most parts of England; and especially in early summer and autumn, when, after a frosty morning, and gossamer lines are numerous over the grass fields, numbers of both sexes may be found running on the silken threads.

NERIENE LONGIPALPIS.

LINYPHIA LONGIPALPIS, *Sundevall*, Sv., *Spindl.*, *Beskr.*, in *Vet. Akad. Handl.*, f. 1829, p. 212; *ibid* 1832, p. 259 in part.

NERIENE LONGIPALPIS, *Cambr.*, *Trans. Linn. Soc.* xviii., p. 447, pl. xxxiv., No. 23 and 24.

This spider is a little larger than the foregoing, but resembles it very closely in form, structure and colour. It may, however, be recognised, without much difficulty, by the last joint but one of the male palpus, which, instead of having the produced portion, at the fore extremity of the upper side, broad and obtuse, has that part rather more produced, and somewhat pointed. It is found in the same localities and at the same periods as *Neriene atra*, but is a much rarer spider, especially in Dorsetshire, where I have only met with it on two or three occasions.

NERIENE DENTIPALPIS.

THERIDION DENTIPALPE, *Wider*, Mus. Senck. 1, p. 248, taf. 17, fig. 1.

NERIENE DENTIPALPIS, *Cambr.*, Zoologist 1863, p. 8598, and Trans. Linn. Soc. xxviii, p. 448, pl. xxxiv., No. 21.

This spider is of the same size as *Neriene atra* and exceedingly like that, and the last species also; but it may be distinguished readily, from both, by a small, but distinct, tooth-like spine behind the radial joint of the male palpus; the same joint is also very prominent at the fore extremity on its outer side, and the produced portion of the upper side differs in form from that of both the other species.

It is found at the same periods and in the same localities as *N. atra*, and is equally abundant.

NERIENE GRAMINICOLA.

NERIENE GRAMINICOLA, *Blackw.*, Spid. Great Brit. and Irel., p. 272, pl. xix., fig. 186.

LINYPHIA GRAMINICOLA, *Sundevall*, Sv., Spindl. Beskr. in Vet. Akad. Handl., f. 1829, p. 213.

The male measures 1-10th of an inch in length. The colour of the cephalo-thorax (which has the ocular area a little prominent) is yellow-brown, with a blackish marginal line, and some converging blackish lines on the thoracic portion; the legs and palpi are reddish yellow-brown, and the abdomen blackish. The cubital joint of the male palpus has a short, pointed, spur-like prominence beneath the fore extremity, but it is not nearly so long as that in the three foregoing species. The radial joint is

stronger than the cubital, and has three projections at its fore extremity; two, large and obtuse, on the upper side, project over the base of the digital joint, while the third is small, pointed, and situated underneath; each of the falces is armed with a strong prominent tooth in front towards the fore extremity on the inner side. The female (and now and then the male) has sometimes a longitudinal, central, ill-defined, pale band on the upper side of the abdomen. The sexes are, in most other respects, similar to each other. This is a tolerably common spider at Bloxworth on furze bushes when in full bloom, and on the branches of trees, as well as among underwood. It is also found in many other parts of England, and in Scotland.

NERIENE NIGRA.

NERIENE NIGRA, *Blackw.*, Spid. Great Brit. and Irel., p. 271, pl. xviii., fig. 185.

The length of this spider is rather more than one line. It is almost completely black, or black with a brownish tinge; the cephalo-thorax is glossy, while the abdomen is of a dull hue, and the legs are reddish-brown. The caput is rather elevated, and prominent in the ocular region. The palpi are similar in colour to the legs, and (in the male) the cubital joint is long, and enlarges gradually to its fore extremity, while the radial joint has its upper extremity produced into a long, narrow process, ending in a bent point, the point directed outwards. The digital joint is rather small, and the palpal organs have a kind of corkscrew-shaped, spiny process at their extremity.

I have found this spider tolerably plentiful on iron railings at Bloxworth in the months of April and May; and it is one of those to which, in its young state, much of the gossamer over our fields in autumn is due. It is also found in other parts of England, as well as in Scotland.

NERIENE LONGIMANA.

ERIGONE LONGIMANA, *C. L. Koch*, Die Arachn. viii., p. 93, Taf. 278, fig. 661, 662.

NERIENE VAGANS, *Blackw.*, Spid. Great Brit. and Irel. p. 257, pl. xviii., fig. 173.

The male of this spider is rather less than 1 line in length, the female being slightly larger.

The caput is not elevated above the thoracic level, nor is it prominent before; the whole cephalo-thorax is of a more or less dark, yellowish-brown colour; the legs reddish brown, and the abdomen nearly black.

It may be easily recognised by the great length of its slender palpi, of which the digital joint is very small, while the radial has its fore extremity, in front, produced into a long, curved process, the point of which is enlarged and roundish.

As yet we must reckon this little spider among our rarer species, inasmuch as I have only met with it in Dorsetshire (at Bloxworth and in the neighbourhood) three or four times. It appears to be far more frequent in Wales and Scotland; and is adult during the summer months. It may be distinguished from some other minute, and allied, spiders, with long palpi, by the browner hue of the cephalo-thorax, and the absence of any spur on the under side of the cubital joint, as well as by the more depressed caput. The sexes resemble each other in colour and general characteristics.

NERIENE RUFIPES.

LINYPHIA RUFIPES, *Sundevall.*, Sv. Spindl. Beskr. in Vet-Akad. Handl., f. 1829, p. 215; 1832, p. 259.

NERIENE MUNDA, *Blackw.*, Spid. Great Brit. and Irel., p. 265, pl. xviii., fig. 180.

The length of the male of this spider is 1-8th of an inch; the female being rather larger.

The colour of the cephalo-thorax is reddish-brown ; the caput, of the male especially, suffused with a deeper hue ; that of the legs is red, and the abdomen brownish-black with sometimes a broadish, pale brownish-yellow, longitudinal, central band on the upper side ; this band is frequent in the female, but less often found in the male. The caput is not elevated. The palpi of the male are remarkable for the large size, and tumid form of the cubital joint ; the radial joint has its outer extremity produced into a large process, and there is another, of a less size, at the inner extremity, with a third (the smallest) beneath. The falces of the male have a tooth-like process towards their fore extremity, rather on the inner side.

This not an uncommon spider among underwood, and on the lower branches of oak trees at Bloxworth in early summer ; and Mr. C. W. Dale has found it, not unfrequently, at Glanvilles Wootton. I have also received it from other localities, both in England and Scotland.

NERIENE RUBENS.

NERIENE RUBENS, *Blackw.*, Spid. Great Brit. and Irel., p. 270, pl. xvii., fig. 184.

This spider is of the same size as the last.

The colour of the cephalo-thorax (of which the caput is considerably and abruptly elevated, and prominent) together with that of the legs and palpi is yellowish-red. The abdomen is reddish-brown. The male of this spider may be recognised by the peculiar form of the palpi, as well as by the abruptly elevated caput. The fourth (or humeral) joint of the palpus is very strong, enlarging gradually to its fore extremity, where there is, on the upper side, a strong, spine-like spur, together with a good many, very small, pointed, black, or red-brown spines ; the radial joint has its inner extremity produced into a tapering, curved process, with another rather shorter and less pointed, at the end of the outer side.

The female resembles the male in colours and general characteristics.

This spider is found among underwood, and on furze bushes, in the months of May and June, and in autumn, at Bloxworth, and in many other British localities. It should be remarked that the legs of the first two pairs, in the male of this and the next two species, have the under side of the tibiae enlarged, and thickly furnished with hairs, towards the anterior extremity.

NERIENE BIFIDA.

NERIENE BIFIDA, *Cambr.*, Zoologist 1863, p. 8587, and Trans. Linn. Soc. xxviii., p. 449, pl. xxxiv., No. 14.

This spider is closely allied to the preceding, resembling it very nearly in size, colours, and structure; but it may be at once distinguished by the form of the fore extremity of the upper part (ocular region) of the caput; this part is divided longitudinally, by a rather deep cleft, into two segments, each of which has four of the eyes upon it. The palpi are exceedingly similar to those of *N. rubens*. A single example of the male, found at Bloxworth on a furze bush, at the end of summer, some years ago, is at present the only recorded example.

NERIENE ISABELLINA.

MICRYPTANTES ISABELLINUS, *C. L. Koch*, Die Arachn. viii., p. 109, Taf. 282, fig. 676, 678.

NERIENE RUBELLA, *Blackw.*, Spid. Great Brit. and Irel., p. 281, pl. xix., fig. 194.

Nearly allied to *Neriere rubens*, which it resembles closely in general form, structure, and colours. The abdomen is, however, generally of a redder hue, and the caput is not quite so much elevated, nor so prominent; the palpi of the male differ entirely; they are strong, the cubital joint is of inordinate size and tumidity, and has a sharp-pointed process at its fore extremity, near the

outer side, in front. The radial joint is very short, but has its fore extremity produced into a very long, strong, curved, slightly tapering process pointing outwards over the outside of the digital joint; and there is another, very much smaller, curved process on the outer side, directed backwards. The form of these joints will distinguish this spider at once from *Nerienne rubens*. The females are difficult to distinguish at first sight, but their respective genital apertures are quite different in form.

This spider is not rare among underwood, in summer and autumn, at Bloxworth; and Mr. C. W. Dale has sent it to me from Glanvilles Wootton. I have also received it from other parts of England, and from Scotland.

NERIENE VIGILAX.

NERIENE VIGILAX, *Blackw.*, Spid. Great Brit. and Irel., p. 277, pl. xix., fig. 191.

Length of the male scarcely one line.

The caput of this spider is not elevated. The colour of the cephalo-thorax is dark-brown, that of the legs reddish, and the abdomen black. The fore extremity, on the upper side, of the radial joint of the palpus, has a curved, obtusely pointed process pointing outwards, and the palpal organs have a slender black spine coiled round at their fore extremity, towards the outer side, and covered with a thin membranous substance.

This is a very rare spider, and has been found once or twice only, as yet, in Dorsetshire, running on a roadway in summer time. Mr. Blackwall has met with it, once only, in North Wales.

NERIENE HERBIGRADA.

NERIENE HERBIGRADA, *Blackw.*, Spid. Great Brit. and Irel., p. 285, pl. xix., fig. 199.

The length of the male of this spider is less than 1 line, being about 1-15th of an inch; and the female is rather larger. The colour of the cephalo-thorax is brown, that of the legs yellow-

brown ; the abdomen is somewhat like the legs in colour, but of a much darker hue. The radial joint of the palpus is larger than the cubital, and has its fore extremity, rather on the inner side, produced into a strongish, obtuse process ; the palpal organs have two long, slender, contiguous, curved, black spines connected with them, and extending beyond the extremity of the digital joint. The caput is not elevated, but there is a longitudinal, narrow indentation running backwards, immediately behind each of the lateral pairs of eyes. This indentation is confined to the male. The female does not differ in colours and general characters from the male.

It is not common, but I have met with this spider occasionally, in spring-time, among moss in woods at Bloxworth ; and it has been found by Mr. Blackwall in North Wales.

NERIENE AFFINIS.

NERIENE AFFINIS *Blackw.*, Spid. Great Brit. and Irel., p. 259,
pl. xviii., fig. 175.

The long palpi, and very small digital joints, which are roundish and scarcely wider than the next joint, render this rare spider easily distinguishable. It is about 1-7th of an inch long. The colour of the cephalo-thorax is dark reddish-brown, the legs and palpi being of a bright yellowish-red hue. The cubital joint of the palpus has a short, conical, prominent, pointed spur beneath its fore extremity. The falces are strong, prominent at their base in front, divergent at their extremity, and, in the male, with a strong tooth, towards the inner side, near the middle. The caput is not raised above the level of the thoracic region. The abdomen is black. The female resembles the male in general characters and colours.

I have only met with this spider in Dorsetshire on one occasion, at Bloxworth, among moss and grass, in early summer. Two other examples have been recorded in England, one found in Yorkshire, the other in Derbyshire.

NERIENE DENTATA.

NERIENE DENTATA, *Wider., Blackw.*, Spid. Great Brit. and Irel., p. 258, pl. xviii., fig. 174.

The length of the male of this species is 1-10th of an inch, the female being rather larger. Like those of *Nerienne affinis*, the falces of the male have a strong tooth in front, but the two species may be readily distinguished by the caput, which is, in the present spider, more convex behind the eyes, and rather elevated above the thorax, the most elevated part being clothed with numerous strong hairs. The digital joints of the palpi are large, and the palpal organs prominent and complex; the cubital joint has also a small spur beneath its fore extremity. Its colours are generally of a duller hue than those of *N. affinis*. The female is similar in colour to the male, and in both sexes the abdomen frequently has a central, longitudinal pale stripe.

I have found this spider at Bloxworth and in several other parts of Dorsetshire (but not in abundance), among moss and water weeds in marshy places, in the months of May and June. It has also occurred in Scotland.

NERIENE AGRESTIS.

NERIENE AGRESTIS, *Blackw.*, Spid. Great Brit. and Irel., p. 276, pl. xix., fig. 190.

The male of this little spider is no more, and often less, than 1-12th of an inch in length. The colour of the cephalo-thorax is yellow-brown, the legs and palpi pale reddish-yellow, and the abdomen dark blackish-brown. The upper side of the caput is somewhat convexly raised above the rest. The palpi are moderately long, slender, and the radial joint has a very small projection at the extremity on the upper side, armed with two sharp points. The digital joint and palpal organs are also small. The female is larger than the male, and often has a pale, longitudinal stripe down the middle of the upper side of the abdomen, very much resembling, in this respect, the female of *Nerienne munda*.

This spider is not rare in spring and early summer, running on the iron railings on the lawn at Bloxworth Rectory. I have also found it in pastures, among grass and herbage, in several other localities in this county. It occurs in numerous other localities in England, and I have also received it from Ireland and Scotland.

NERIENE RETUSA.

ERIGONE RETUSA, *Westr.*, Aran. Suec., p. 253.

NERIENE ELEVATA, *Cambr.*, Zoologist 1862, p. 7966.

The size of this spider is about the same as that of *Neriene agrestis*, and its colours are also similar; but the male may be easily distinguished by the hinder part of the caput being a little elevated, and then suddenly dropping to the normal level by an abrupt slope just behind the eyes; forming there (if looked at sideways) a kind of notch. The radial joints of the palpi are also quite different, and of a rather peculiar form; the cubital joint is longer than the radial, and slightly clavate; the radial is prominent at its extremity in front, the prominence ending in a small, pointed apophysis, directed outwards; and beneath the prominence is a small, black, sharp pointed spine, slightly curved, with its point directed rather backwards and outwards.

The female resembles the male in colours.

This is, apparently, everywhere, a rare spider. In Dorsetshire I have only met with it on two or three occasions, and then in company with *Neriene agrestis*. I have found it also in Lancashire, and have received it from both Scotland and Ireland.

NERIENE APICATA.

NERIENE APICATA, *Blackw.*, Spid. Great Brit. and Irel., p. 269, pl. xviii., fig. 183.

This is another little spider closely allied to the last, and similar to it in size, colour, and general appearance; but it may

at once be recognized by a small, perpendicular, obtusely-pointed, somewhat subconical eminence on the caput, behind the eyes, surmounted by a crest of hairs. It is a rare spider everywhere. I have, twice or three times only, found it among grass and herbage at Bloxworth in summer time, and it has occurred in Wales and Scotland. The female is probably very like that of the foregoing species, though it has not yet been certainly identified.

NERIENE GIBBOSA.

NERIENE GIBBOSA, *Blackw.*, Spid. Great Brit. and Irel., p. 278.

This spider is a very little larger than the last, but resembles it very much in its general colouring. It may however be easily distinguished by the form of the cephalo-thorax, which has a very large, obtusely rounded protuberance, on the middle of the upper side, at the occiput; and immediately in front of this is a deep hollow, or depression, furnished with strong bristly hairs, whose points appear to converge over it. The palpi of the male bear considerable resemblance to those of *Nerience apicata*, but the radial apophyses are rather stronger.

I have found specimens of this very distinct spider, rather abundantly on one occasion, among moss in a swamp near Chamberlains Bridge, between Bere and Wool, in the month of June. It has been met with also in North Wales and Scotland. The female is rather larger than the male, and has not the protuberance on the cephalo-thorax.

NERIENE TUBEROSA.

NERIENE TUBEROSA, *Blackw.*, Spid. Great Brit. and Irel., p. 279, pl. xix., fig. 192.

This spider is about the same size as the foregoing—about 1-12th of an inch, or rather more in length—and resembles it in colours and general appearance.

The cephalo-thorax has also the middle of its upper side con-

siderably elevated or gibbous, but not so abruptly protuberant as in the last species; nor is there any depression, clothed with hairs, in front of the elevation as in *Neriene gibbosa*. The palpi are very similar to those of that species.

The female is very difficult to be distinguished from that of *Neriene gibbosa*; resembling it almost exactly in size and colours.

I have found this species in tolerable abundance in the same locality, and at the same period of the year, as the spider last mentioned; and Mr. Blackwall has met with it in North Wales.

NERIENE CORNUTA.

NERIENE CORNUTA, *Blackw.*, Spid. Great Brit. and Irel., p. 267, pl. xviii., fig. 181.

The male of this very abundant but distinct little spider is about 1-12th of an inch in length, and the female is rather larger. It may be known at once by two longitudinal-oval protuberance on the fore part of the upper side of the caput; these protuberances are parallel, and close to each other, and have a rather forward direction, the eyes being close in front of them. The cephalo-thorax is of a deep black-brown colour, the legs and palpi brownish-red, and the abdomen black. The radial joint of the male palpus has a long, slender, curved, pointed apophysis at the fore extremity on the inner side, a small, curved, pointed one in front, and a short obtuse one underneath; the palpal organs are complex. The female resembles the male in colours, but is larger and wants the cephalic protuberances.

I find this spider, very frequently, running on iron railings, and on posts in sunshine, in spring-time and early summer; also on bushes and the lower boughs of trees at Bloxworth, and in many other localities in Dorsetshire and England generally. It is found also in North Wales,

NERIENE BITUBERCULATA.

NERIENE BITUBERCULATA, *Wider., Blackw.*, Spid. Great Brit. and Irel., p. 268, pl. xviii., fig. 181.

This spider is very nearly allied to *Nerience cornuta*, and the male has two protuberances on the caput like that species; but it may at once be distinguished by its larger size (the male measuring 1-10th of an inch in length), and the proportionately larger and bolder protuberances, as well as by its totally different colourings.

The cephalo-thorax, legs, and palpi are of a clear, bright reddish-yellow colour, and the abdomen black. The protuberances on the caput are much paler in colour than the surrounding surface. The palpi also are of a rather different structure from those of *Nerience cornuta*.

The female resembles the male in colours, but is larger, and the caput is but very slightly protuberant behind the eyes, with a very fine, depressed, longitudinal line over the middle of the protuberant part.

I have found both sexes of this spider among water-weeds, and moss, in a swamp at Bloxworth, as well as near Chamberlain's bridge; it has occurred also, running in sunshine, on the parapet of the bridge, and on the causeway fence, Morden Park, near Bloxworth; and I have received it from some other parts of England, and from Scotland.

NERIENE CLARKII.

NERIENE CLARKII, *Cambr.*, Trans. Linn. Soc., xxvii., p. 441, pl. 56, No. 30.

The adult male is 1-11th of an inch long. The cephalo-thorax is yellowish-brown, the legs rather lighter coloured, and the abdomen of a dull, blackish hue. A leading character of this spider is the unusually large size of the digital joints of the

palpi and palpal organs; these, together, present the appearance of an enormous club at the end of a very slender stem. The radial joint is very short, shorter than the cubital, and is dilated on each side of its extremity; the outer dilation is the longest, ending in a blunt point; and both are furnished with hairs, of which some form a row round their outer margins. The caput does not rise above the thoracic level. This spider is allied to *Nerienne livida*, Blackw., but the far larger size of the digital joint and palpal organs, will serve to distinguish it without any difficulty. The female is unknown.

An example of this rare spider was found by my son (Robert Jocelyn), on iron railings at Bloxworth Rectory, on the 24th of March, 1875; and another was met with by myself under a piece of old board in the kitchen garden, on the 24th of May, 1877. Two other examples only have, as yet, occurred in Britain, one near Dover, and the other at Paisley, in Scotland.

NERIENE LATEBRICOLA.

NERIENE LATEBRICOLA, *Cambr.*, Trans. Linn. Soc. xxvii., p. 444, pl. 56, No. 32.

The male of this spider is only 1-16th of an inch long. The cephalo-thorax has the caput slightly raised above the thorax, but only in a generally convex form; its colour is a light yellowish-brown, that of the legs being of a deeper hue, tinged with red-brown; and the abdomen is dusky-brown, tinged with greenish-yellow. The radial joint is equal to the cubital in length, but is stronger, and projects from its upper side, towards the hinder extremity, a long, strong, slightly sinuous, rather bent, bluntish pointed apophysis, the length of which almost equal to that of the radial and cubital joints together.

I found both sexes of this very distinct little spider, in tolerable abundance, among moss in a wood at Bloxworth, in the spring of 1866. It had been discovered only a few days previously near Paisley, in Scotland.

NERIENE FUGAX.

NERIENE FUGAX, *Cambr.*, Trans. Linn. Soc. xxvii., p. 445, pl. 56,
No. 33.

An adult male measured 1-13th of an inch in length. The whole spider is of a very elongate form. The caput is not raised above the thorax, but behind each lateral eye, of the hinder row, there is a small, but distinct, longitudinal indentation. The colour of the cephalo-thorax is a deep, rich brown, while that of the legs is bright, yellowish red-brown, the femora, however, being paler than the rest. The abdomen is of a rather flattened, elongate-oval shape, glossy black, with a greenish tinge. The palpi are yellowish and short; the cubital joint is curved, enlarges gradually to the fore extremity and is longer than the radial joint, which has three projections from its extremity; the largest and longest of these projections is in front, and ends in a straight, red-brown, shining, corneous point, directed outwards over the base of the digital joint; this last joint is large, of a round-oval form, and contains the palpal organs, which are prominent and complex. The eyes are rather large, and those of the two lateral pairs, with the four-centrals, form a curved line, with scarcely any intervals between them. An adult female resembled the male but was smaller.

The two examples, above mentioned, of this distinct spider, are the only ones yet recorded, and were found among moss, in a wood at Bloxworth, in April, 1867.

NERIENE NEGLECTA.

NERIENE NEGLECTA, *Cambr.*, Trans. Linn. Soc. xxvii., p. 443, pl.
56, No. 31, a, b, c, d, e.

The adult male measures 1-12th of an inch in length. The caput is not raised above the thoracic level. The colour of the cephalo-thorax (which is of a flattish form, with scarcely any marginal compression at the caput), is of a yellow-brown colour, with a few bristly hairs, directed forwards, in the central line. The legs are of a pale yellowish hue, and the abdomen blackish-

brown. The falces are long, strong, straight, perpendicular to the caput, rather gibbous in front near the base, and compressed, or pinched in, at their extremities. Both the radial and cubital joints are of a clavate form, the radial being broadly, and obtusely produced at its extremity on the outer side.

This spider is evidently very rare, since but one example is on record in Dorsetshire. It was found among moss at Bloxworth in 1863. Some years since that time, however, I have received one or two specimens of it from Scotland.

NERIENE LIVIDA.

NERIENE LIVIDA, *Blackw.*, Spid. Great Brit. and Irel., p. 252, pl. xviii., fig. 169.

„ „ *Cambr.*, Trans. Linn. Soc., xxvii., pl. 56, fig. No. 31, f.g.h.

This spider is very nearly allied to the foregoing, being of the same general form; but it is much larger, measuring 1-8th of an inch in length. It is also of a much deeper, richer colour, besides differing slightly, though distinctly, in the structure of the palpal organs. The cephalo-thorax is red-brown, deepest on the caput; the legs are dark, reddish yellow-brown, and the abdomen blackish-brown, with four reddish yellow-brown, impressed spots, in the form of a quadrangle, on its upper side. The falces have the extremities flattened, as if by a sudden pinch or compression very similar to those of *Neriene neglecta*. The female is larger, but resembles the male in colours and general characters. It is not a rare spider under stones, and among moss, or other *débris*, in damp places at Bloxworth, and in several other localities in Dorsetshire. It is also generally distributed throughout England and Scotland.

NERIENE ALBIPUNCTATA.

NERIENE ALBIPUNCTATA, *Cambr.*, Trans. Linn. Soc., xxviii., p. 451, pl. xxxiv., No. 15.

The male of this spider measures nearly 1-6th of an inch in

length, and the female is larger. It may readily be distinguished by the great length and strength of the divergent falcēs, which are armed on their inner sides with two strong, prominent, sharp teeth, one of which is much larger than the other, and has a small tooth-like prominence near the middle of its anterior side, giving it a somewhat bifid look. The fangs are also long, strong, slightly bicurvate, and have a shallow, tooth-like eminence about the middle of the inner side. The cephalo-thorax and legs are dull yellow-brown, and the abdomen black, with a few small whitish spots on the upper side, arranged in two longitudinal, widely-separated rows. The legs of the first and second pairs have, besides other bristles and hairs, numerous erect ones on the tibiæ and metatarsi. The palpi somewhat resemble those of *Neriene livida*. The female resembles the male in colours and general appearance.

Two examples of the male were met with at Bloxworth, among grass in damp places in May and June, 1870-71, and a third among heather, in 1875. In June, 1877, a male and several females were found, among star grass, on the sand hills near the sea at Studland.

On a spider very closely allied to the present *Herr Menge*, in his History of Prussian Spiders, has established a new, and, probably, good genus *Drepanodus*.

NERIENE RUFA.

THERIDION RUFUM, *Wider*, Zool. Misc. Mus. Senck., p. 218, pl. xv., fig. 3.

NERIENE RUBRIPES, *Blackw.*, Spid. Great Brit. and Irol., p. 287, pl. xix, fig. 201.

The male of this spider is about 1-6th of an inch in length, and the caput does not rise above the level of the thorax. The colour of the cephalo-thorax is red-brown, the legs reddish, and the abdomen brownish-black. The falcēs are very strong, prominent towards their base in front, and have a tooth-like process near their extremity towards the inner side; and the legs are furnished not

only with hairs, but with strongish bristles, approaching the nature of spines; they are called spines by Mr. Blackwall, but are not, however, reckoned to be spines, *sensu stricto*, by other authors. The distinction between a strong bristle and a slender spine is an extremely arbitrary one, and liable to be disregarded or not, according to the systematic value placed upon the presence or absence of spines. If the present spider were considered to possess true spines on the legs, it would, according to some authors, have to be removed from the genus *Neriene* into that of *Linyphia*; since *Neriene*, *sensu stricto*, ought not to contain spiders with such spines. It appears to me that the armature in question does, in this species, come rightly under the description of *fine spines*, and that eventually this spider will, with some others, form a generic group pretty nearly equivalent to *Bathyphantes* Mengo. The palpi are long; the radial joint is rather produced, in an obtuse form, at the fore extremity of the upper side, where (as well as on the sides) it is furnished with strong bristles. The digital joint is of moderate size, with a very distinct lobe, or prominence, on the outer side. The palpal organs are prominent and complex, with, among others, a large, bent, irregularly triangular process at their base on the outer side. The female is rather larger and lighter coloured than the male.

I have found this spider, though very rarely, among moss in early summer at Bloxworth; and it has been met with in Scotland and Wales, but equally rarely.

NERIENE SAXATILIS.

NERIENE SAXATILIS, *Blackw.*, Spid. Great Brit. and Irel., p. 262.

The male of this small spider measures but 1-12th of an inch in length, and the caput is on a level with the thorax. The colour of the cephalo-thorax is brown, that of the legs paler brown, and the abdomen blackish. The radial joint of the palpus has at its fore extremity, near the upper side, a pointed projection curved outwards, and the digital joint has a protuberance at its

base, which is indented on the outer side. The palpal organs are highly developed, and complex. The legs are furnished with a few, very fine, bristle-like spines, and on this account it is placed in the genus *Linyphia* by Dr. Thorell. It has, however, it seems to me, stronger affinity to *Neriene* in the more important parts of its structure, and consequently I have not followed in this removal. It will probably form one of the group mentioned in describing the last species.

Found, but rarely, among moss at Bloxworth in the spring, and early summer months. It has also been met with in North Wales and Scotland.

NERIENE SUNDEVALLII.

ERIGONE SUNDEVALLII, *Westr.*, Aran. Succ., p. 290, and *Cambr.*, Trans. Linn. Soc. xxvii., p. 450.

The length of the male of this spider is 1-13th of an inch, and the female is a little larger. The cephalo-thorax is of a yellowish-brown colour, the caput darkest, but not raised above the level of the thoracic portion. The legs are of a yellow-brown hue, sometimes tinged with dull reddish. Those of the first and second pairs are not only furnished with hairs and slender bristles, but have also, beneath the tibiae and metatarsi, two longitudinal rows of decided, and slightly curved, strongly divergent spines. These spines are most conspicuous in females. The colour of the abdomen is dark blackish-brown, and occasionally quite black. The palpi are short, the digital joint is of moderate size, but the palpal organs are not remarkable for any great peculiarity of development. The female resembles the male in colours, as well as in the spines beneath the two fore pairs of legs.

I have found both sexes of this little spider on several occasions among moss in damp woods, at Bloxworth, in the months of April, May, and June, and have also received it from Ireland.

The spines underneath the two first pairs of legs will serve to distinguish this species from all others of this group known to me.

NERIENE DOLOSA, sp. n.

Adult male length 1-14th of an inch.

The whole of this little spider, which had evidently not long attained maturity, is of a pale, dull, whitish hue, which would in the course of a short time, probably have deepened into yellow-brown, varying in depth on different parts.

The profile of the cephalo-thorax, which is considerably convex. forms a strong curve on the caput and thorax, to the beginning of the hinder slope, and the normal indentations are not very strongly defined; five bristly hairs, directed forwards, form a straight line along the middle of the caput.

The *eyes* are of moderate and not very unequal size; they are closely grouped in a transverse and somewhat oval figure; the posterior row strongly curved, the anterior almost straight, The eyes of the two lateral, and fore-central pairs form a strong, even curve with no perceptible intervals between any of the six eyes of which it is composed. The intervals between those of the hinder row are nearly about equal, and do not exceed an eye's diameter.

The *falces* are moderate in length and strength, perpendicular, very slightly divergent at the extremities, and armed with a few very minute teeth.

The *legs* are short, rather slender, 1.4.2.3., furnished with hairs, and a few slender erect bristles on the upper sides of the tibiae.

The palpi are short, the radial is stronger than the cubital joint, spreading, and prominent in front; the digital joint is rather small, with a somewhat prominent lobe on the outer side; the palpal organs are moderately complex, with two or three small, black, spine-like projections close together at their fore extremity, and a much larger, sub-triangular process with a prominent black point, at their base on the outer side; this point is in such close connection with the fore extremity of the outer side of the radial joint, that it is not easy to see, at first, whether it forms part of that joint or not.

The abdomen is of a short-oval form, in fact, nearly globular; the anterior part projects over the base of the cephalo-thorax, and the posterior extremity extends rather over the spinners, which are thus seated a little underneath.

A single example of this spider was found among moss in Morden Park, near Bloxworth, at the beginning of October, 1878.

NERIENE LUCIDA.

NERIENE LUCIDA, *Cambr.*, Trans. Linn. Soc., xxviii., p. 452, pl. xxxv., No. 27.

The length of the adult male is not quite 1 line.

The colour of the cephalo-thorax (of which the caput and thorax are on the same level) is a dark, blackish, shining brown, with a single longitudinal central row of bristly hairs. The colour of the legs is bright orange-yellow, and the palpi of a rather duller hue. The abdomen is jet black, glossy, and has four tolerably conspicuous impressed dots, or punctures, nearly in the form of a square, about the middle of the upper side. The radial joint of the palpus is produced at its outer extremity, a little in front, into a considerable, slightly curved, and obtusely ended projection, whose broad point is directed rather inwards. The digital joint is large, the palpal organs prominent, but not very complex, and furnished with closely fitting, strongish, double-coiled, black, filiform spine at their extremity.

A single example only has yet been recorded; this was found in Bloxworth, in June, 1870, running among grass in a damp meadow. It is allied to *Neriene vigilax*, Bl., but differs in the colour of the legs, and in the form and direction of the radial apophysis.

NERIENE VIARIA.

NERIENE VIARIA, *Blackw.*, Spid. Great Brit. and Irel., p. 255, pl. xviii., fig. 171:

The male measures 1-10th of an inch in length, and the caput

does not rise above the thoracic level. The colour of the cephalo-thorax is dark yellow-brown. The legs and palpi are paler, and the abdomen is either deep brown, or black. The cubital joints of the palpi have some long, strongish hairs at their extremity, in front, in a sort of tuft. The digital joint is rather large and has a largeish lobe on the outer side; the palpal organs are prominent and complex.

This spider occurs occasionally at Bloxworth, among moss and at the roots of rank herbage in hedges; I have also found it several times crossing the road in sunshine. The group of long hairs on the cubital joints of the palpi are a striking, and distinguishing character. I have received this spider from some other parts of England, as well as from Scotland and North Wales.

NERIENE NIGRICEPS.

NERIENE NIGRICEPS, *Cambr.*, Ann. and Mag. N. H., Ser. 4, Vol. 16, p. 248, pl. viii., fig. 6.

A very distinct and interesting little spider. The length of the adult female is $1\frac{1}{2}$ lines. The profile of the cephalo-thorax shews that the caput is not raised above the thorax. The colour of the cephalo-thorax is orange-yellow, the caput black; the legs and palpi are rather paler than the cephalo-thorax, and the abdomen is dull black, tinged with olive. The legs are long, rather strong, particularly the femoral joints, and are furnished with hairs, and a few slender, prominent, spine-like bristles on the femora and tibiae. The falces are rather long, not very strong, slightly divergent, and nearly perpendicular. The eyes of the hind-central pair are distinctly nearer to each other than each is to the lateral eye next to it. Those of the fore-central pair are not quite contiguous to each other, and are divided from the fore-laterals also by a very small interval.

A single example was found among heather at Bloxworth, in May, 1875.

NERIENE SYLVATICA.

NERIENE SYLVATICA, *Blackw.*, Spid. Great Brit. and Irel. p. 254.

The length of the male is 1-4th of an inch. The caput is level with the thorax. The colour of the cephalo-thorax is brown. The legs and palpi are tinged with red, and the abdomen is brownish-black. The falces have each a longitudinal row of very short fine spines near the outer side in front. The cubital and radial joints of the palpi are short, and the former has a long strong, straight spine-like bristle at its fore-extremity in front. The digital joint is of a tolerable size, and has a strongish sub-conical enlargement at the upper part in front, a smaller conical one at the base, and a prominent lobe on the outer side. The palpal organs are prominent and complex; besides other processes, there is, on the outer side of the upper part, a strong curved, obtuse, corneous one, whose outer edge is distinctly serrated.

This spider is exceedingly rare in Dorsetshire, having occurred, at Bloxworth, on only one or two occasions. It seems to be more common in the north of England. Several examples having been received from Berwickshire, and it has been met with in North Wales. The row of minute spines on the falces, and the serrate-edged process of the palpal organs are very characteristic, and quite sufficient for the distinction of this spider from others nearly allied.

NERIENE FUSCIPALPIS.

MICRYPHANTES FUSCIPALIS, *C. L. Koch.*, Dio Arachn., iii., p. 46.,
pl. lxxxix., fig. 202.

„ RURESTRIS, *ibid.*, l. c., p. 84, pl. ci., fig. 231, 232.

NERIENE GRACILIS, *Blackw.*, Spid. Great Brit. and Irel., p., 256
pl. xviii., fig. 172.

„ FLAVIPES, *ibid.*, l. c., p. 264, pl. xviii., fig. 178.

The adult male of this slender and delicate little spider varies

in length from 1-12th to 1-14th of an inch in length and the female is a little larger.

The caput does not rise above the thoracic level. The cephalo-thorax is black or nearly so, as also is the slender, narrow, oviform abdomen; the legs are rather long, very slender, and vary from yellowish to red-brown. The radial joints of the palpi are very short, and have a very small, pointed projection at their fore extremity on the outer side. The digital joint is subconically prominent towards its base, the prominent part indented on the outside; the palpal organs are complex, but pretty compact, and, with the digital joint, are of a nearly circular form. The falces are strong, divergent, and rather attenuate at their extremities; and the legs are armed with a few erect, very slender spinos, or rather strong bristles.

This is an abundant, and almost universally distributed spider throughout the summer and early autumn months. It may be seen, frequently, running on the ground; or, as it is strongly addicted to aerial excursions, it will often be found on one's hat or coat, intercepted in its airy flight; it is also frequent among grass and other herbage. Having had the opportunity of examining typical examples both of *Neriène flavipes*, Bl., and *Neriène gracilis*, ibid., I feel no doubt about their being specifically identical.

NERIENE PENICILLATA.

ERIGONE PENICILLATA, *Westr.*, *Aran Succ.*, p. 289.

NERIENE CORTICEA, *Cambr.*, *Zoologist*, 1862, p. 7964.

The adult male of this small, but very distinct, spider measures only 1-16th of an inch in length, and the female is a trifle larger. The caput does not rise above the thoracic level; but there is a strong transverse depression about the region of the occiput, which is seen very distinctly when looked at in profile. The colour of the cephalo-thorax is blackish-brown, the legs and palpi yellowish-brown, and the abdomen black. The radial joints of the palpi have the upper side rather protuberant, and

furnished with a tuft of strong, bristly, black hairs, and at the fore extremity is a strong projection, stretching obliquely outwards over the base of the digital joint, and ending somewhat in the form of a crescent.

This species is not rare among lichens on trees (especially apple trees) at Bloxworth, and is adult in the early summer months. I have also met with it at Glanvilles Wootton.

NERIENE INNOTABILIS.

NERIENE INNOTABILIS, *Cambr.*, Zoologist 1863, p. 8582.

The adult male measures 1-12th of an inch in length. The caput is level with the thorax. The colour of the cephalo-thorax is yellowish-brown, the legs rather paler, and the abdomen darker brown. The two central eyes of the hinder row are *further from each other* than each is from the lateral eye, of the same row, on its side. The palpi are short, the radial joint is rather longer and stronger than the cubital, and is produced a little in front on the inner side, ending in an obtuse point. The cubital joint has several strong, black, bristly hairs in front on the upper side; the digital joint is large and obtusely conical on the upper side, the point of the cone rather directed outwards. There is also an angular enlargement near the base on the outer side. Palpal organs prominent and complex. Rare at Bloxworth among moss in spring. I have also met with it at Hursley, near Winchester.

NERIENE SUBTILIS.

NERIENE SUBTILIS, *Cambr.*, Zoologist 1863, p. 8584.

Adult male, length 1-12th of an inch. The caput does not rise above the level of the thorax. The colour of the cephalo-thorax is reddish yellow-brown, that of the legs brightish red-brown, paler at the articulation of the joints, and the abdomen black, or brownish-black. The two central eyes of the hinder row are *nearer together* than each is to the lateral eye on its side.

The palpi are very similar to those of *Neriene innotabilis*, to which it is closely allied, but the conical prominence on the digital joint is stronger; the relative position of the eyes of the hinder row also differs, as may be seen on comparing the descriptions of the two spiders. Found occasionally among moss in woods at Bloxworth in the months of May and June.

NERIENE CONIGERA.

NERIENE CONIGERA, *Cambr.*, Trans. Linn. Soc. xxviii., p. 450, pl. xxxiv., No, 17.

Adult male, length 1-15th of an inch, female rather larger. The caput is on about the same level as the thorax, with a strongish dip between them. The colour of the cephalo-thorax is yellow-brown marked with blackish marks, and veinings, most of which converge to the thoracic junction; the legs are yellow, tinged with orange in some specimens, slender, and rather short; the abdomen black, glossy, and clothed very sparingly with hairs. The eyes are of tolerable size, and rather closely grouped in a tranverse, oval figure, the two rows being of equal curvature; those of the hind-central pair are a very little further from each other than each is from the lateral eye on its side.

This spider may be easily distinguished from both the foregoing (to which it is nearly allied) by its smaller size, and by the far greater development of a somewhat similar, but more considerable, conical prominence on the digital joint of the adult male; the apex of this prominence is slightly directed backwards and outwards, in a somewhat curved form. The palpal organs are highly developed, and complex.

The female resembles the male in colours and other general characteristics.

Found, very rarely, on furze bushes on the heath at Bloxworth, in spring and early summer. I have received it from Aberdeen and Berwickshire; and have met with it also on furze bushes at Newhaven, near Brighton.

NERIENE PALLIPES,

NERIENE PALLIPES, *Cambr.*, Trans. Linn. Soc. xxvii., p. 437.

Adult male, length 1-17th of an inch.

The colour of the cephalo-thorax of this small spider is yellowish-brown, finely margined with black. The legs are moderate in length and strength, furnished with hairs and a few slender spines, and of a pale, dull, yellowish colour. The abdomen is oval, glossy, very thinly clothed with hairs, and of a dull black hue. The caput is confluent on the sides with the thorax, owing to the very slight development of the normal indentations; when seen in profile, the outline of the caput forms an even curve to the base of the falcis; the height of the clypeus is equal to half that of the facial space. The eyes are small, and rather closely grouped together; they differ but little in size; the hind centrals are rather nearer to each other, than each is to the lateral eye next to it; the fore-centrals are contiguous to each other, and each is about an eye's diameter from the fore lateral next it.

The palpi are short, and the radial and cubital joints are of equal length; the former is the strongest, but is devoid of any projections; the digital joint is comparatively large, and greatly exceeds in length that of the radial and cubital joints together; the palpal organs are complex and highly developed.

The female resembles the male in colours and general characters, but is rather larger.

An example of each sex was found on low bushes in a wood at Bloxworth, in July, 1860.

NERIENE ANOMALA.

NERIENE ANOMALA, *Cambr.*, Zoologist, 1863, p. 8585.

Length of the adult female 1-11th of an inch.

The cephalo-thorax is dull yellow-brown, with some sooty lines converging to the thoracic junction; the legs and palpi are bright yellow-brown; and the abdomen is large, of a long-oval

form, and of a sooty, brown-black hue, thinly clothed with short, pale hairs. The palpi are short, the digital joint is large, of a long-pointed, oval shape, tumid at the base and pointed at its extremity, like the undeveloped palpus of male spiders. The genital aperture has a strong prominence connected with it; and had it not been for the plain evidence, as to sex, furnished by this latter portion of structure I should, without hesitation, have decided the examples examined to have been those of immature males. The eyes of the hind-central pair are rather further from each other than each is from the hind-lateral eye on its side; those of each lateral pair are placed very slightly obliquely, and are contiguous to each other.

This remarkable spider is very rare, among heather, at Bloxworth; and it may easily be distinguished from all others yet known to me, by the tumid digital joint of the palpus above detailed. Mr. Dale has also met with it among moss at Glanvilles Wootton.

NERIENE MOLLIS.

NERIENE MOLLIS, *Cambr.*, Trans. Linn. Soc., xxvii., p. 439.

The length of the adult male is 1-16th of an inch.

This is a very minute and obscure species; and, as it had only recently moulted, it had not quite attained its permanent colours. These appeared to be (like those of many others of the genus) yellow-brown on the cephalo-thorax; legs and palpi yellow, and abdomen brownish-black. The caput is level with the thorax, with a shallow, notch-like depression between them, when seen in profile; the height of the clypeus is equal to half that of the facial space. The eyes are closely grouped, of moderate size, and do not differ much, in this respect, from each other; those of the fore-central pair are not quite contiguous, but are equally separated from each other, and from the fore laterals. The intervals also between those of the hinder row are very nearly equal. The palpi are very short, the radial is rather stronger than the cubital joint, but is destitute of any terminal projection or apophysis;

the digital joint is small and round-oval in form; the palpal organs are well developed and complex, but compact.

One example only, found at Bloxworth, has as yet come before me. When first described it was stated, inadvertently, to have been found near London. Its nearest ally is *Nerience fuscipalpis*, C. L. Koch, but the falces are larger and less strong at their base, and the form and structure of the palpi and palpal organs is different.

NERIENE ARUNDINETI.

NERIENE ARUNDINETI, *Cambr.*, Trans. Linn. Soc. xxvii., p. 441.

Adult female length 1-10th of an inch.

This spider is very like the female of *Nerience livida*, Bl., it is, however, smaller; its abdomen is blacker, and devoid of the pale markings, and red-brown, impressed spots on the upper side, and is more perceptibly clothed with long, prominent, pale hairs; nor is it likely to be the female (at present unknown) of *Nerience neglecta*, *Cambr.*, the relative position of the eyes of the hinder row being different; in the present spider these are equidistant from each other; and the inner extremities of the falces are devoid of the depressed, or pinched form characteristic both of *Nerience livida* and *Nerience neglecta*; it is more like the female (lately discovered) of *Nerience albipunctata*, *Cambr.*, but at present I believe it to be distinct also from that species.

I have met with but one example of this spider—in a marshy spot at Bloxworth in 1866. It occurs (I am told by Dr. L. Koch who has examined the specimen described) near Nürnberg, in Bavaria.

NERIENE FORMIDABILIS.

NERIENE FORMIDABILIS, *Cambr.*, Trans. Linn. Soc., xxvii., p. 447.

This is the largest spider of the group yet known to me, the length of the adult female being very nearly 1-5th of an inch.

The colour of the cephalo-thorax is dark yellow-brown; the

falces darker, and strongly tinged with red. The legs and palpi are bright brownish-yellow; and the abdomen is deep black-brown, clothed pretty thickly with fine prominent hairs. Looked at in profile, the outline of the caput and thorax forms a rather convex curved line, from the eyes to the hinder slope, which is long and gradual; the clypeus is nearly vertical, and its height is equal to half that of the facial space. The eyes are small, seated on black spots, but do not differ greatly in size; those of the lateral pairs are seated on oblique tubercles; those of the hind-central pair are nearer to each other than each is to the lateral eye, of the same row, next to it. The falces are moderately long, but massive and strong, very prominent at their base in front, straight, nearly perpendicular, and armed with some strong sharp denticulations, near their extremity on the inner sides. The legs are furnished with hairs only. A single example was found at Bloxworth among dead leaves in spring-time, some years ago. It is nearly allied to (but I think distinct from) *Nerience huthwaitii*, Cambr., a spider not yet found in Dorsetshire, though very likely to occur there.

NERIENE ASPERA.

NERIENE ASPERA, *Cambr.*, Trans. Linn. Soc. xxvii., p. 448.

Adult female, length 1-11th of an inch.

This spider is nearly allied to *Nerience neglecta*, Cambr., of which, as before remarked, the female is not yet known. It resembles that species very closely in form and colours, but is rather smaller and *much more hirsute*, the hairs on the legs and abdomen being coarser and denser; it is also allied to *Nerience oblonga* (now removed to *Linyphia*); but it may be at once distinguished from the latter species by the absence of any spines on the legs, as well as by the larger size, and closer grouping of the eyes. These form two, more nearly straight, transverse rows, the rows being *very close to each other*. The eyes of the hind-central pair are nearer to each other than each is to the lateral on its side; and those of the fore-central pair are not quite contiguous to each other. The

height of the clypeus is equal to half that of the facial space. The terminal tarsal claws are more than usually conspicuous.

A single example only was found, in the month of June some years ago, on the iron railings enclosing the lawn at Bloxworth Rectory.

NERIENE APERTA.

NERIENE APERTA, *Cambr.*, Trans. Linn. Soc. xxvii., p. 450.

The length of the adult female is 1-16th of an inch.

The whole of the fore part of this spider (which is allied to *Neriene livida*, Bl.), including the legs and palpi, is yellow-brown, tinged slightly with red; and the abdomen is black, tinged with yellowish, and clothed thinly with hairs. The eyes of the hinder row are separated by equal intervals, and the fore-centrals are contiguous to each other. The height of the clypeus slightly exceeds half that of the facial space, and the occipital region is a very little higher than the rest of the caput and thorax. The legs are clothed with coarse hairs, and a few slender, erect bristles. The falces are strong, slightly directed backward, and rather divergent. The large size of the genital aperture, which is nearly circular, and placed on the summit of a large, red-brown, rounded protuberance, is very characteristic.

A single example found among moss at Bloxworth, in April, 1866.

NERIENE HISPIDA.

NERIENE HISPIDA, *Cambr.*, Trans. Linn. Soc. xxvii., p. 449.

Adult female length 1-8th of an inch. This spider resembles *Neriene livida*, Bl. very closely in its colours, but is smaller and of a stouter form, and may be readily distinguished by the rugulosity of the front of the falces which are strong, straight, and vertical; a portion at the base and at the extremity is, however, free from rugulosity, and the extremity is not pinched in, or flattened, as in *N. livida*. The abdomen also is blacker and more hirsute; being clothed with short, strong, prominent hairs, and projecting

greatly over the base of the cephalo-thorax. The height of the clypeus is equal to half that of the facial space. The eyes of the hind-central pair are nearer together than each is to the lateral eye, next to it; the fore-centrals are unusually separated, and with the hind-centrals form very nearly a square, whose fore side is a little the shortest. The legs are strong, and well furnished with coarse hairs and slender erect bristles.

This species is nearly allied to (but I think distinct from) *Neriene albipunctata*, Cambr. Examples of it were found at Portland, under stones, in October, 1860.

NERIENE JUGULANS, sp. n.

Length of an adult female 1 line.

This spider is of ordinary form, and bears considerable general resemblance to several other species.

The cephalo-thorax has the profile line slightly impressed between the eyes, and the thoracic indentation; and the lateral marginal constriction, on each side of the caput, is also very slight. Its colour is yellow, margined with a fine black line, that of the legs being of a rather deeper, or more orange-brown hue; the sternum is slightly suffused with sooty-brown, and the abdomen is also of a slightly sooty, yellow-brown colour, with various specklings and lines of a clearer hue, probably visible only in spirit of wine.

The eyes are rather closely grouped together in two transverse rows, the hinder row curved, the convexity of the curve being directed backwards, and the front row nearly straight. All, excepting those of the fore-central pair, are rather large, and nearly equal in size; the fore laterals being, apparently, the largest. Those of the posterior row are very nearly, if not quite, equally separated from each other, the intervals being equal to about half of an eye's diameter; that between the two hind-centrals is, perhaps, slightly greater than the rest; those of each lateral pair are placed a little obliquely, and are almost, but not quite, contiguous to each other; those of the fore central pair are difficult to distinguish

clearly, but are apparently contiguous to each other, and are separated from the fore laterals by only a very small interval. The height of the clypeus is less than half that of the facial space, but is greater than the diameter of one of the fore lateral eyes.

The legs are moderate in length (4. 1. 2. 3.), rather strong, especially the femoral joints, and are furnished sparingly with hairs, and with a few fine, prominent, spine-like bristles on the outer sides of the tibiæ. The palpi are short, similar in colour to the legs, and are also furnished with a few strong, spine-like bristles. The falces are rather short, tolerably powerful, nearly vertical, armed with a few small teeth, and like the cephalo-thorax in colour.

The abdomen is of an elongate-oval, somewhat cylindric, form, and projects over the base of the cephalo-thorax. The genital aperture is large, of very characteristic form, and placed at the hinder margin of a large, roundish convexity.

This spider is a striking instance of the difficulty of assigning the true generic affinity of many of the small spiders at present included in the genus *Neriene*; it has a decidedly *Drassid* appearance, but is yet removed far from that family by the possession of three terminal tarsal claws, and the absence of any claw at the end of the female palpus. It is also, not remotely, allied to some of the spiders at present included in the genus *Linyphia*, such as *Linyphia oblonga* Cambr., and *Linyphia incerta*, *ibid.*; but it may be distinguished by the larger size of the eyes, which are seated upon black tubercular spots.

The only example I have seen, as yet, is one found in the autumn of 1878, near Sherborne, by my nephew (Frederick P. Cambridge).

NERIENE BICUSPIS.

NERIENE BICUSPIS, *Cambr.*, Zoologist 1863, p. 8588, and Trans.
Linn Soc. xxviii., p. 451, pl. 35, No. 26.

This is one of the most remarkable species of the genus. The

length of the adult male is no more than 1-21st of an inch, or not much more than half a line.

The cephalo-thorax is broad, flattened, and nearly round, the fore part broadly truncate, or squared off; near each frontal corner is a moderately elevated, tubercular eminence, surmounted by a short, strong, pointed, black cusp or spine, slightly curved, and its point directed inwards and forwards.

The colour of the cephalo-thorax is a dull, semi-diaphanous, olive-brown; that of the legs and palpi pale yellow-brown; the articulations of the joints of the legs are strongly tinged with reddish orange-brown; and the abdomen is glossy, of a dark sooty-brown hue, and sparingly clothed with hairs.

The palpi are long; the cubital longer and stouter than the radial joint; which last has the upper side of the fore extremity produced into a kind of longish, tapering, nearly straight spur, and in opposition to this is another more pointed one at the lower side. The form of the extremity of this joint is difficult to describe correctly, and has the appearance of being very different from different points of view. The eyes of the fore and hind central pairs form a quadrangle, broadest behind, between the frontal cusps, and the lateral pairs are seated very obliquely at the bases, in front, of the tubercles on which the cusps stand.

Except in wanting the frontal tubercles and cusps, and being rather larger, the female resembles the male.

Found not unfrequently, at Bloxworth Rectory, in April and May, 1862 (but more rarely since) upon iron railings; in the angles formed by the uprights and rails of these, it spins an irregular snare, and sits in it in an inverted position. In 1874 I received this spider from the neighbourhood of Paris, where it was found by Mons. Eugène Simon.

GENUS WALCKENAERA, *Blackw.*

The numerous little spiders comprised in this genus cannot be

separated generically from *Neriëne*; that is to say not as that genus is at present characterized and limited; but they may be, for the most part, easily distinguished (at least in the male sex) by the structure of the fore part of the caput; this portion is, excepting in a few instances, more or less elevated protuberant or prominent, and the eyes are grouped more or less closely *upon* or *round* the elevation. In *Neriëne*, on the contrary, the eyes are always external to any eminence on the caput; and, excepting in a comparatively few instances, there is no eminence at all upon it. The females of *Walckenaëra*, excepting those of a few species, are destitute of the form of the caput so characteristic of the males, and are, mostly, quite indistinguishable from the females of *Neriëne*. In colours the spiders of the two genera are usually similar; different depths, however, of colouring are good specific characters in *Walckenaëra* as they are also in *Neriëne*; the various species of *Walckenaëra* are also found in similar situations, and (so far as they are known) their habits and snare are similar. The armature of the legs consists of hairs, and very slender bristles only; these latter are generally erect or very prominent, and never attain a spinous nature as do those of some species of *Neriëne*.

The genus *Walckenaëra* contains some of the smallest known spiders—one, *W. diceros*, Cambr.—measuring less than half a line in length.

The differences in the form and structure of the caput constitute the most tangible, as well as the best, specific characters of the male. Fifty-seven species are at present known as British, and of these thirty-eight have been found in Dorsetshire.

A Prussian arachnologist, Herr Menge, has constituted numerous genera out of the various species of *Neriëne* and *Walckenaëra*, but as most of his genera are chiefly based on almost microscopic characters, derived from a portion of the male structure only, they will hardly (at any rate not all of them) retain their place in a scientific system.

WALCKENAERA BREVIS.

THERIDIUM BREVE, *Wid.*, Zool. Misc. Mus. Senck. p. 236 (242),
pl. xvi., fig. 8.

WALCKENAERA DEPRESSA, *Blackw.*, Spid. Great Brit. and Irol.,
p. 306, pl. xxi., fig. 221.

The adult male measures less than one line in length, the female being rather larger; both sexes are almost exactly similar in form and colours. The cephalo-thorax is broad-oval, and its surface punctuose; the fore part (or caput) full, prominent, bluff, and rounded, but without any distinct elevation; its colour is dark brownish-black. The legs are short and, with the palpi, are yellow-brown, with a strong chestnut-red tinge. The abdomen is black, often tinged with deep chestnut-brown; it is of a very short oval, almost circular and flattened form, projecting greatly over the base of the cephalo-thorax; the upper side, in the male, is covered with a kind of coriaceous integument thickly beset with minute impressed dots or punctures, and presents a shield-like appearance. The palpi are short, and the digital joint and palpal organs of moderate size, the latter complex. The eyes are similar in position to those of *Neriene*, and the height of the clypeus is equal to half that of the facial space. This, and several of the following species, can hardly be distinguished from *Neriene*, as at present characterized. I have, however, left them for the present (for reasons before mentioned) in the systematic position here assigned to them.

This little spider is not rare among moss and at heather roots at Bloxworth, and in other localities, in spring and early summer, when they are adult. It has occurred also in Scotland and North Wales.

WALCKENAERA BREVIPES.

WALCKENAERA BREVIPES, *Westring*, Aran. Suec. p. 294.

„ „ *Cambr.*, Trans. Linn. Soc. xxviii., p.
454, pl. xxxv., No. 28.

This spider is nearly allied to *Walckenaera brevis* Wid., which it

resembles very closely in form, colours, and other general characters. It is, however, smaller, the male measuring less than 3-4ths of a line in length, *i.e.*, about 1-17th of an inch; and the *height of the clypeus is much greater*, being equal to two-thirds of that of the facial space; this last character serves to distinguish it readily. The palpi and palpal organs of the male differ slightly also in structure.

Found at Bloxworth at the same season of the year, and in the same situations as *W. brevis*, and also received from Scotland.

WALCKENAERA SCABROSA.

WALCKENAERA SCABROSA, *Cambr.*, Trans. Linn. Soc. xxvii., p. 463, pl. 57, No. 38.

This is also a very near ally of *Walckenaera brevis* Wid.; it may be easily distinguished by its larger size—the male measuring 1-14th of an inch in length, and the female 1-11th.

In colour, form, and general structure it is very similar to both the foregoing species. The height of the clypeus is much greater than that of *Walckenaera brevis*, being very slightly less (proportionately) than that of *Walckenaera brevipes*. The much larger size of the digital joint of the male palpus, and the more highly developed spiny processes of the palpal organs are also very strong distinguishing characters, and will enable the collector to separate it easily from both the foregoing species.

Found, but very rarely, at Bloxworth Rectory; in eighteen years I have met with it only on two or three occasions.

WALCKENAERA PRÆCOX.

WALCKENAERA PRÆCOX, *Cambr.*, Trans. Linn. Soc. xxviii., p. 549, pl. 46, fig. 19.

The length of the adult male is rather less than 1-16th of an inch.

The whole of the fore part of the spider is yellow-brown, excepting the legs and palpi, which are of a clearer and paler

colour. The cephalo-thorax is something like that of *Walckenaera brevipes* Westr., but the general shape is less short, and not nearly so circular; the caput is also less massive; its colours however, as well as other characters (especially a long, narrow, deepish, longitudinal indentation running backwards from each of the hind lateral eyes), will most readily distinguish it from either of the foregoing spiders. The palpi are short; the radial apophysis is small, slender, prominent, and pointed, and projects from the fore extremity of the joint slightly towards the inner side; the palpal organs are simple.

A single example only, found by my nephew, Frederick P. Cambridge, among grass on the lawn at Bloxworth Rectory, in March, 1872.

WALCKENAERA SUBITANEA.

ERIGONE SUBITANEA, *Cambr.*, Ann. and Mag. N.H., s. 4, vol. 16, p. 249, pl. 8, fig. 7.

This very minute spider is very nearly allied to *Walckenaera præcox*, *Cambr.*, it is, however, smaller, the adult male measuring no more than 1-23rd of an inch in length.

The curve of the hinder row of eyes is also less strong, and the height of the clypeus is, as nearly as possibly, equal to half that of the facial space, while in *Walckenaera præcox* it is less than half. The occiput (in profile) is also more gibbous, and the radial apophysis is far less prominent. The eyes of the hinder row are equidistant from each other, while those of the hind-central pair of *Walckenaera præcox* are distinctly nearer to each other than each is to the lateral eye next to it. A nearly similar indentation runs backward from each hind-lateral eye, and in other respects also it bears close resemblance to the last mentioned spider.

A single example, found in May 1874 among decayed wood in an outhouse at Bloxworth Rectory, is as yet, the only recorded instance, of its occurrence.

WALCKENAERA DICEROS.

WALCKENAERA DICEROS, *Cambr.*, Trans. Linn. Soc. xxvii., p. 454, pl. 57, No. 39.

This very remarkable and distinct little spider is the smallest yet known of the order *Araneidea*, measuring no more than 1-25th of an inch in length.

The fore part of the cephalo-thorax is broad and bluff, but has no distinct elevation; two little, sharply bent, horn-like, black processes, not far from each other in a transverse direction, issue from small tubercles near the middle of the area enclosed by the four pairs of eyes; these horns are apparently composed of several pairs of confluent black bristles; and from behind each lateral pair of eyes a long, deep, indentation runs obliquely backwards. The cephalo-thorax is pale yellow-brown with a narrow black margin. The legs and palpi are tinged with reddish, and the abdomen is dull brownish-black. The radial joint of the palpus has, in front on its inner side, a long prominent projection the extremity of which is rather obliquely truncated; and the palpal organs have a strong black spine curved round their fore extremity in a circular form.

Very rare; two examples of each sex, found among moss in woods at Bloxworth, are all that I have met with during fourteen years, in spite of many a long and wearisome search for it.

WALCKENAERA SAXICOLA.

WALCKENAERA SAXICOLA, *Cambr.*, Ann. and Mag. N.H., June, 1861, and *Blackw.*, Spid. Great Brit. and Irel., p. 311, pl. xxi, fig. 226.

The adult male measures rather less than 1 line in length.

The cephalo-thorax is of a dark brown colour, the legs and palpi pale yellowish-brown, with the tibiæ of the first and second pairs dark brown, and the abdomen brownish-black. The upper part of the caput is slightly and obtusely elevated, and behind it is a transverse dip or depression, giving a notched

appearance in the profile line. The palpi are short; the radial joint is broad and strong, and has three apophyses, a rather long slender one curved outwards in front of the digital joint, a strong crescent-shaped one in front, towards the outer side, and a short obtuse one underneath; the digital joint is large, and the palpal organs complex; a black filiform spine is curved in a circular form near their middle, and from within its curvature, a black, slightly cork-screw-shaped spine, enveloped in membrane, is directed obliquely forward and downwards. The female is rather larger than the male, and resembles it in colours, but the caput is less elevated.

Adults of both sexes of this rare spider were found under stones and pieces of rock at Portland, near Pennsylvania Castle, in July, 1860. It is allied to *Walckenaëra antica*, Wid., and also to the next species described.

WALCKENAERA ATRO-TIBIALIS.

WALCKENAERA ATRO-TIBIALIS, *Cambr.*, Ann. and Mag. N.H., s. 5, vol. 1, p. 116, pl. 11, fig. 3.

The length of the female is one line.

This spider is nearly allied to the foregoing as well as to *Walckenaëra antica*, Wider.; from both, however it may be distinguished by the tibiæ of *all the legs* being black, instead of, as in those species, the tibiæ of the two first pairs only. The transverse depression behind the caput is stronger than that of the female of *Walckenaëra saxicola*; and the colours of the spider are far less vivid than those of *Walckenaëra antica*.

A single example only, found in Berewood near Bloxworth, among moss and dead leaves in June, 1876.

WALCKENAERA CUSPIDATA.

WALCKENAERA CUSPIDATA, *Blackw.*, Spid. Great Brit. and Irel. p. 290, pl. xx., fig. 204.

The length of the male is rather more than 1 line, and the

female is slightly larger. The colour of the cephalo-thorax is dark reddish-brown, that of the legs and palpi bright yellowish-red, and the abdomen is glossy black. The caput is not distinctly elevated, but the spider may be known at once by a small, black, projecting, horn-like prominence directed forwards from the centre of the ocular area. The horn being a little smaller at its extremity than at its base. The palpi are of tolerable length; the radial joint has two or three strong apophyses at its extremity; the digital joint is large, and the palpal organs complex.

This is a rare spider. I have found it occasionally at Bloxworth, among moss in the spring season. It has also been met with in some other parts of England, as well as in Scotland and North Wales.

WALCKENAERA UNICORNIS.

WALCKENAERA UNICORNIS, *Cambr.*, Ann. and Mag. N. H., June, 1861.

„ „ *Blackw.*, Spid. Great Brit. and Irel., p. 293, pl. xx., fig. 207.

In size, colours, general form, and structure, this spider is exceedingly like *Walckenaera cuspidata*, Bl., resembling it also in having a horn-like process between the eyes; but it may be readily distinguished by the different form of the process. In the present spider this is stouter, paler coloured, more vertical, and rather enlarged, as well as cleft, or bifid, at the top. The form also of the radial apophysis differs, as also does the structure of the palpal organs, the palpi having, however, a very similar general appearance, and being about the same size.

This is a rare spider; found occasionally at Bloxworth at the same seasons as *W. cuspidata*, and in similar situations. I have also found it at Lyndhurst, Hampshire, and have received it from some other parts of England.

WALCKENAERA MONOCEROS.

THERIDIUM MONOCEROS, *Wider.*, Zool. Misc. Mus. Senck, p. 230 (236) pl. xvi., fig. 3.

WALCKENAERA MONOCEROS, *Blackw.*, Spid. Great Brit. and Irel. p. 291, pl. xx., fig. 205.

The male of this curious little spider measures 1 line in length. The cephalo-thorax is reddish-brown, the legs reddish-yellow, and the abdomen deep yellowish-brown. It is allied to both the fore-going spiders, but may be distinguished without difficulty by the small projecting horn-like process, issuing from the middle of the ocular area, being of a conical form directed rather downwards, and furnished with numerous divergent, and upturned, clavate hairs. The eyes are also smaller and describe an area broader in proportion to its length than in *Walckenaera cuspidata* and *W. unicornis*. The palpi and palpal organs are of peculiar and characteristic structure. The radial joint has a large, curved, tapering apophysis, whose obtuse point is bifid or notched, at its extremity on the inner side, and has its point directed outwards, and in front is a smaller, dark-coloured, spine-like apophysis opposed to the other. The palpal organs are complex, with a strong spine curved in a circular form at their extremity.

I met with several examples (of the male only) of this very rare spider, under stones and pieces of rock near Pennsylvania Castle, Portland, in the autumn of 1859; since which time I have not again found it. I had previously found a single example at Southport, in Lancashire.

WALCKENAERA PUNCTATA.

WALCKENAERA PUNCTATA, *Blackw.*, Spid. Great Brit. and Irel, p. 295, pl. xx., fig 210.

The male is rather more than 1 line in length, and the female is about 1-10th of an inch.

The cephalo-thorax is of a very dark, slightly reddish, brown colour; the caput has no distinct elevation, but is rather raised,

and prominent in front, and a strongish indentation runs backwards from each lateral pair of eyes. The cephalo-thorax is also pretty thickly marked with roundish punctures on the lateral margins, as well as with rows of the same, converging to the thoracic indentation. The sternum is also similarly punctured. The legs and palpi are of a bright, warm, reddish colour, and the abdomen is glossy black. Two apophyses project from in front of the radial joint; the upper one is strong, pointed, prominent, and conspicuous; the other is smaller, and less prominent. The palpal organs are complex, and well developed.

This very distinct spider occurs, but not very commonly, among moss in damp places, and in swampy grounds among coarse grass and water-weeds, on the heath, at Bloxworth and in the neighbourhood. It has occurred also in Scotland, Yorkshire, and North Wales.

WALCKENAERA BIFRONS.

WALCKENAERA BIFRONS, *Blackw.*, Spid. Great Brit. and Irel., p. 302, pl. xxi., fig. 218.

The male measures less than 1 line in length.

The cephalo-thorax is of a deep brown colour, and the caput is perpendicularly elevated into a large, roundish-topped eminence, compressed on the sides, and the summit divided by a longitudinal groove or impression. The eyes are on the front of the prominence, some little way below the summit, and the lower part of the clypeus is very prominent. The legs and palpi are yellowish-red, and the abdomen is brownish-black, and glossy. The radial joint of the palpus is not nearly so long as the cubital, and the apophysis, at its outer extremity, is small, and a little curved. The palpal organs are highly developed and complex, and have a curved, black spine at their fore extremity.

A rare spider, found occasionally at Bloxworth, on low bushes, in woods, in June and July, and received from North Wales and Scotland.

WALCKENAERA HUMILIS.

WALCKENAERA HUMILIS, *Blackw.*, Spid. Great Brit. and Irel., p. 307, pl. xxi., fig. 223.

The adult male measures 1-18th of an inch in length, and the female about 1-16th.

The whole caput is rather raised, and considerably produced projecting forwards in a slightly upward, sloping direction, but has no distinct elevation; it is broadly truncated at its extremity, and the eyes are placed in four pairs, occupying the whole area of the truncation, which has also some short hairs upon it. The colour of the cephalo-thorax and abdomen is brownish-black; the legs and palpi are red-brown. The cubital is longer than the radial joint, which last is broad and produced over the base of the digital joint, and ends in a bifid form, one limb of the bifid part being curved and pointed, the other much larger, longer, and prominent, with its termination a little enlarged and obtuse. The palpal organs are highly developed and complex.

This rare spider occurs occasionally among moss in woods in early summer at Bloxworth. It seems to be more frequent in the North, where some years ago (at Edinburgh) I found it on several occasions running in bright sunshine, on the pavement of the City, in the months of June and July. It has also occurred in Lancashire.

WALCKENAERA AFFINITATA.

WALCKENAERA AFFINITATA, *Cambr.*, Trans. Linn. Soc. xxviii, p. 454, pl. 35, No. 30, and Zool. 1863, p. 8, 591.

The length of the male is 1-15th of an inch.

This spider is nearly allied to, but quite distinct from, *Walckenaera humilis*, *Blackw.* The caput is more elevated, more porrected, and less obtuse at its fore extremity, where it is also truncated in a less horizontal line. The palpi and palpal organs bear a general resemblance to those of *Walckenaera humilis*; but are rather more exaggerated in their development.

The cephalo-thorax is dark brown, almost black; the legs and palpi pale yellowish-brown, and the abdomen (which is of a short oval form, and very convex above) is of a deep black-brown colour; the ocular area is furnished with some short, prominent, bristly hairs.

A single example, found at Bloxworth in May, 1861, remained, until lately, unique; but on the 22nd of June, 1877, I found another among star grass, on the sand-hills near the sea, at Studland.

WALCKENAERA CRASSICEPS.

ERIGONE CRASSICEPS, *Westr.*, *Aran. Succ.*, p. 231.

The length of the male is about 1-14th or 1-15th of an inch.

This spider is nearly allied to *Walckenaera humilis*, Blackw., and still more closely to the last species, *Walckenaera affinitata*, Cambr. The caput is considerably elevated and prolonged forwards, the extremity being somewhat obliquely truncated, but also undivided, like that of the two species mentioned. The eyes are placed in four pairs, exactly north, south, east, and west, on the truncated part, forming an area about half as broad again as it is long; the far greater height and length of the elevation, as well as the larger size of the spider, distinguish it at once from *Walckenaera humilis*. From *Walckenaera affinitata*, to which it bears a closer resemblance, it may be distinguished by the occiput being more convex, or gibbous, a peculiarity seen at once when looked at in profile, the profile line of the occiput in *Walckenaera affinitata* being of a more even, upward slope. The ocular area also is of less extent in its longitudinal diameter. The clypeus exceeds, in height, the length of the area formed by the fore and hind central pairs of eyes; it retreats considerably, and its profile line is rather incurved. The colour of the cephalo-thorax is dark brown, tinged with olive-green on the caput. The margins are black, and there are some indistinct, radiating, blackish lines on the thoracic region. The legs are slender, and of tolerable length, clothed with short, fine hairs only, and of a dull

yellowish hue. The palpi are moderately long; the cubital joint is clavate and slightly curved; the radial joint is short, but broadly and greatly produced over the digital joint, the greater part of which it conceals. The produced part narrows gradually to a curved, prominent, and obtuse extremity, which is directed upwards, *i.e.*, away from the digital joint. The palpal organs are prominent and complex, with a prominently, curved, black spine, in contact with some semidiaphanous membrane, beneath their fore extremity. The abdomen is black.

A single example of this very interesting spider was found on the lawn at Bloxworth Rectory by my son (Robert Jocelyn), in May, 1877. This is its first record as a British spider. One example only, from Bavaria, had previously come before me.

WALCKENAERA CRISTATA.

WALCKENAERA CRISTATA, *Blackw.*, Spid. Great Brit. and Irel., p. 309, pl. xxi., fig. 224.

The male of this very distinct species measures 1 line in length, and the female is rather larger.

The caput is rather elevated, porrected, and divided at its fore extremity into two segments, by a deep, transverse groove, or indentation; each segment is clothed at its summit with numerous hairs meeting over the indentation and forming a crest. The posterior segment bears the hind-central pair of eyes, and the anterior segment the fore-central pair, the lateral pairs being much lower down below the cleft. The falcies are placed far back, and are much inclined to the sternum.

The colour of the cephalo-thorax is brownish-black, the legs and palpi red-brown, and the abdomen glossy-black. The palpi are moderately long; the cubital joint is of a clavate form, and the radial joint is broadly and obtusely produced over the base of the digital joint with a curved, spine-like, pointed process, directed outwards from its inner extremity.

This is by no means a common spider, but is found occasionally at Bloxworth, and in the neighbourhood, among lichens on apple

trees, as well as among moss in woods in spring and early summer months. It has also occurred in other parts of England, in Wales, and Scotland.

WALCKENAERA PERMIXTA.

WALCKENAERA PERMIXTA, *Cambr.*, Trans. Linn. Soc. xxvii., p. 45, pl. lvii., No. 42.

This spider is allied to *Walckenaëra cristata*, Bl., but may easily be distinguished, not only by its smaller size (the male measuring no more than 1-15th of an inch in length), but also by the form of the fore part of the caput, and the structure of the palpi and palpal organs. It is also less deeply and richly coloured.

The cephalo-thorax is of a dark, rich, brown colour, and very glossy. The caput of the male is elevated, and much porrected in an upward, evenly sloping direction; and is also divided into two segments by a deep transverse notch or cleft; but the hinder slope is far less abrupt than in *Walckenaëra cristata*, and the two segments (of which the hinder one is much the smallest) are less pointed, and not nearly so conspicuously clothed (at their summits) with hairs. The radial joint is considerably produced in front, at its extremity, over the base of the digital joint, and has a row of three short, black, sharp-pointed spines, near together, and directed outwards not far from its extremity.

Found in some abundance in May, 1863, under decaying rubbish in a swamp at Bloxworth; but I have never met with it since. It has, however, been sent to me from more than one locality in Scotland, and the North of England.

WALCKENAERA ANTICA.

THERIDIUM ANTICUM, *Wider.*, Zool. Misc. Mus. Senck. 1, p. 21, pl. xv., fig. 1.

WALCKENAERA ANTICA, *Blackw.*, Spid. Great Brit. and Irel., p. 310, pl. xxi., fig. 225.

The male measures rather more than 1 line in length, and the female about 1-10th of an inch.

The colour of the cephalo-thorax is a deep, shining, black-brown. The legs are bright red-brown, the tibiæ of the first and second pairs being deep black-brown. The abdomen is glossy and black.

The caput of the male is distinctly, but not greatly, elevated; and is divided into two very unequal segments by a deep transverse cleft in front. The hinder segment is greatly the largest, obtuse, and rounded above, and bears on its summit the hind-central pair of eyes. The anterior segment is very small, and has, near its upper part in front, two small, divergent, pale, processes, curving sharply upwards; and near its base are the eyes of the fore-central pair, the lateral pairs being, on either side, a little below the cleft. The palpi of the male are dark reddish-brown; the radial joint is much stronger than the cubital, and has a large, obtuse process, in front, towards the outer side; a longer, slenderer, pointed one towards the inner side, is directed obliquely over the digital joint, and there is a small obtuse one underneath. The palpal organs are complex, and have a fine, circularly curved spine, covered with membrane, at their extremity. The legs of the female are coloured, like those of the male.

Found frequently among rough grass, near the roots of trees, as well as on iron railings, on the lawn at Bloxworth Rectory, in the months of May and June. It has also been met with in North Wales and Scotland.

Walckenaëra antica is one of the most distinct and remarkable of our indigenous species; and the processes in front of the anterior segment of the caput, with the bright reddish legs and black tibiæ of the first and second pairs, render it one of the easiest to distinguish.

WALCKENAERA FUSCIPES.

WALCKENAERA FUSCIPES, *Blackw.*, Spid. Great Brit. and Irel., p. 295, pl. xx., fig. 209.

The length of the male is one line, and the female is rather larger.

The caput is rather, but not greatly, elevated; it is strongly compressed and deeply indented on the sides of the elevation; and its extremity is divided into two segments by a transverse indentation. The hinder segment is blunt pointed and has the hind-lateral pair of eyes near its summit. The anterior segment is large and bluff, in fact representing the ordinary fore part of the caput, and bears the fore-central and two lateral pair of eyes in a transverse line. Each segment is surmounted with a few short fine hairs. The radial joint is produced, at its fore extremity in front, into a strong broad and obtuse apophysis. The digital joint is small, and the palpal organs are not very complex.

The colour of the cephalo-thorax, legs, and palpi is brown, and that of the abdomen brownish-black.

Found not unfrequently among moss in May and June under hedges and in woods at Bloxworth. It has also occurred in North Wales and Scotland.

WALCKENAERA IGNOBILIS.

WALCKENAERA IGNOBILIS, *Cambr.*, Trans. Linn. Soc. xxvii., p. 457, pl. 57, No. 42.

The adult male of this very minute spider measures no more than 1-20th of an inch in length.

The caput is slightly and obtusely elevated, chiefly in the occipital region; on the fore part of this elevation are the eyes of the hind-central pair, and lower down in a transverse curved line are those of the other three pairs. At the middle of the lower margin of the clypeus near the insertion of the falces is a somewhat pointed sub-tubercular prominence, by which this species may easily be determined; in the region of the eyes are some short, strong, prominent hairs. Palpi short; the radial joint is shorter than the cubital, and has its fore extremity, on the upper side, produced into a broad and large apophysis, whose outer edge is rather hollow, and its inner extremity narrowed into a long spiny point curving sharply round with its point directed outwards.

The colour of the cephalo-thorax is dark rich brown, that of the legs red-brown, and the abdomen sooty black and glossy.

A single example only, found among moss and dead leaves at Bloxworth, in May, 1863. I have more recently received examples of it from Nürnberg in Bavaria.

WALCKENAERA SCABRICULA.

WALCKENAERA SCABRICULA, *Westr. Aran. Suec.*, p. 249.

„ AGGERIS, *Cambr.*, Ann. and Mag. N. H., (3) v., p. 173., and *Blackw.*, Spid. Great Brit. and Irel., p. 301, pl. xxi., fig. 216.

The length of the male is 1-16th of an inch, and the female is rather larger.

The cephalo-thorax is black and glossy; the caput broad, prominent, and obtuse, and the occipital region slightly elevated. The legs and palpi are of a bright yellowish, red-brown colour, and the abdomen glossy black. The eyes are in four pairs, enclosing a space equal in length and width; and an oblong vertical space, between the fore-central and hind-central pairs of eyes, is thickly clothed with hairs; there is also a longitudinal indentation directed backwards from each lateral pair of eyes. The radial joint of the male palpus is stronger than the cubital. The former is produced at its fore extremity on the upper side, and has a sharp apophysis on its outer side. The digital joint is of moderate size, and the palpal organs are prominent and complex.

Very rare, among heath and rough grass in sandy places at Bloxworth, and at Southport, in Lancashire. I have also received it from Scotland.

WALCKENAERA PARALLELA.

WALCKENAERA PARALLELA, *Blackw.*, Spid. Great Brit. and Irel., p. 296, pl. xx., fig. 211.

As nearly as possible of the same size as the last species,

the male measuring 1-16th of an inch in length, and the female 1-14th.

The cephalo-thorax is of a dark brown colour, marked with converging rows of small punctures on the sides; the fore part of the caput is obtuse and prominent, and the occiput is distinctly, but not greatly, elevated, the elevation forming a roundish posterior lobe divided from the anterior lobe by a transverse furrow or indentation. The hind-central pair of eyes are placed in front of the hinder lobe, and the fore-central pair near the upper part of the anterior lobe, the lateral pairs being on each side of the fore-central pair. The legs are reddish yellow-brown, and the abdomen is of a somewhat flattened-convex form above, and of a brown-black colour. The cuticle on the upper side has a semi-coriaceous appearance, and is thickly covered with small punctures; four, more conspicuous, impressed spots forming a quadrangular figure near the middle. The palpi of the male are of a brownish hue, the radial joint is smaller than the cubital and has a longish, straight pointed apophysis at its fore extremity on the upper side. The digital joint is rather small, and the palpal organs are complex, with a slender curved spine at their extremity.

Found rarely among moss and dead leaves, &c., in woods; but more abundantly on iron railings, in the spring of 1878, at Bloxworth; also under pieces of rock at Portland, but rare in the latter locality. The punctured cephalo-thorax and abdomen, with the moderate, but distinct and roundish occipital elevation, enable one to distinguish this little spider without difficulty.

Except in wanting the elevation of the occiput the female resembles the male.

WALCKENAERA PUMILA.

WALCKENAERA PUMILA, *Blackw.*, Spid. Great Brit. and Irel., p. 312, pl. xxi., fig. 227.

The male measures 1-15th or 1-14th of an inch in length, and the female rather more. The cephalo-thorax is dark-brown;

the legs and palpi reddish-brown, and the abdomen black. The caput is moderately elevated, the lower part of the clypeus is prominent, and there is a longitudinal indentation running backwards from each lateral pair of eyes. The hind-central pair of eyes are near the fore part of the summit of the elevation, and the other three pairs are placed, in a transverse line, less than half-way between the central pair and the lower margin of the clypeus. The radial joint of the male palpus is produced at its inner extremity, and has a short, pointed apophysis at its upper one; the palpal organs are prominent and complex, with a very long, convoluted, slender, filiform spino, which springs from their fore part; the digital joint is of unusual form, being broad, but deeply, roundly, and broadly impressed, or hollowed out, at its fore extremity, the hinder extremity being quite narrow.

This is a rare spider, but it occurs occasionally among moss, and under stones, as well as on underwood, at Bloxworth, in spring and early summer time. It has also been found in North Wales and Scotland.

WALCKENAERA OBSCURA.

WALCKENAERA OBSCURA, *Blackw.*, Spid. Great Brit. and Irel., p. 297, pl. xx., fig. 212.

The length of the male is 1-14th of an inch.

This spider is allied to the last, but is not difficult to be distinguished from it. The cephalo-thorax is of a deep, rich, black-brown colour, the legs dull yellowish red-brown, and the abdomen black. The elevation of the caput is very distinct, though not very high (resembling somewhat that of *Walckenaëra fuscipes*); it is placed more on the occiput than that of *Walckenaëra pumila*, and the longitudinal indentations behind the lateral pairs of eyes are much exaggerated, forming strong, deep, lateral compressions, and thus marking off the elevation more distinctly. The caput is glossy, but the thoracic region is of a dull hue, slightly roughened on the surface, whence it has been named by M. Westring, an

eminent Swedish Araneologist—*Erigone impolita*. The radial joint of the palpus is short, and has only two very small pointed projections from its extremity. The digital joint is large, and has a strong conical prominence near the middle, giving it only a little less unusual form than that of *Walckenaëra pumila*. The palpal organs are prominent, complex and furnished with several spines, of which the most remarkable are a long slender one forming a large bold curve from end to end of the organs, but quite free from them excepting at the extremities, and another shorter, stronger, curved one at their fore extremity.

A very rare spider, of which I have only found three or four examples—among moss in spring time at Bloxworth—during upwards of twenty years. It has also been found in Lancashire and North Wales.

WALCKENAERA FLAVIPES.

WALCKENAERA FLAVIPES, *Blackw.*, Spid. Great Brit. and Irel.
p. 298, pl. xx., fig. 213.

This spider is about the same size as *Walckenaëra pumila*, the male measuring 1-15th of an inch in length, and the female 1-14th; it is also nearly allied to that species, but may be distinguished, not only by the greater elevation of the caput, but also by the absence of the long filiform spine connected with the palpal organs, and the different form of the digital joint.

The cephalo-thorax is brownish-black, the legs and palpi yellow, and the abdomen black.

The caput is moderately elevated, the elevation not being confined so much, as in the last species (*Walckenaëra obscura*) to the occiput, of which the profile of the hinder part is almost vertical; and there is a strong indentation directed backwards from each of the lateral pairs of eyes. The hind-central eyes are placed at the upper side of the fore part of the elevation, and the other three pairs nearly about half-way towards the lower margin of the clypeus. The radial joint of the palpus is considerably produced at its fore extremity, which is directed out-

wards, and is somewhat bifid at its termination. The palpal organs are complex, and have a circularly coiled spine at their extremity.

I found both sexes of this spider in abundance on under-wood at Bloxworth, in July, 1860, but since that time have never met with a single example, although I have frequently searched at the same season and in similar situations, in the same, and in various other neighbouring localities. A very striking instance of that uncertainty of occurrence, with which every entomologist is so familiar in respect to many kinds of insects, and for which any adequate reason has seldom ever yet been given. Mr. Blackwall has met with *Walckenaëra flavipes*, in Lancashire and in North Wales.

The female resembles the male in colours, but (like most others of the group) omits the cephalic elevation.

WALCKENAERA HIEMALIS.

WALCKENAERA HIEMALIS, *Blackw.*, Spid. Great Brit. and Irel. p. 302, pl. xxi., fig. 217.

The length of the male of this spider is 1-16th of an inch. The caput is obtusely and distinctly but not greatly elevated; the summit of the elevation being divided longitudinally by a small groove; the fore part, just above the insertion of the falcæ, is considerably prominent, and there is a strong longitudinal indentation behind each lateral pair of eyes. The area enclosed by the four pairs of eyes has numerous short hairs along the middle.

The colour of the cephalo-thorax is deep blackish-brown; the legs are red-brown, and the abdomen black.

The palpi are similar in colour to the legs, the radial joint, however, being dark-brown, and stronger than the cubital; the former joint is greatly and broadly produced at its fore extremity on the upper side, extending considerably over the base of the digital joint; the end of the produced part is curved and directed outwards, and near it is a curved, sharp-pointed spine, which has also an outward direction. The palpal organs are well

developed and complex, but its spiny processes present no especially remarkable feature.

Found on iron railings, running in sunshine, and also among moss in woods in spring time, at Bloxworth. It has also occurred in some abundance in North Wales, in the month of December.

WALCKENAERA LATIFRONS.

WALCKENAERA LATIFRONS, *Cambr.*, Zoologist 1860, p. 8694.

Adult male length 1-14th of an inch.

The caput is distinctly and roundly elevated; the elevation, however, is not excessive, its perpendicular height not exceeding 1-3rd of the whole height of the caput at that part. The upper fore extremity of the caput is considerably prominent, and forms an anterior lobe or segment, divided from the posterior by a strong transverse cleft or indentation. The eyes of the hind-central pair are wide apart, in a transverse line, near the fore part of the summit of the posterior segment; the other three pairs are placed in a transverse line near the extremity of the anterior segment, and behind each lateral pair of eyes is a deep longitudinal indentation. Each segment has some hairs upon it; those on the hinder one are short, bristly, and erect, those on the fore one form a sort of tuft directed backwards over the dividing cleft.

The colour of the cephalo-thorax is deep blackish-brown, that of the legs is a paler and brighter brown, and the abdomen deep sooty black. The cubital joint of the male palpus is larger than the radial, and enlarges gradually to its extremity. The radial joint is strong, and has its fore extremity on the upper side largely and broadly produced over the digital joint. The produced part has an outward direction, and at its extreme outward part is a long, slightly curved, pointed process directed across to the inner side. The palpal organs are prominent and complex, with several curved, corneous, and spiny processes at their extremity.

The female resembles the male in colours and general charac-

ters, but is rather larger and wants the elevation of the caput.

Found once on a wall, as well as more frequently, several years afterwards, during the spring months, among moss and dead leaves in woods, at Bloxworth.

WALCKENAERA IMPLANA.

WALCKENAERA IMPLANA, *Cambr.*, Trans. Linn. Soc. xxvii., p. 456, pl. 57, No. 41.

The adult male of this small species measures 1-17th of an inch in length. The caput is considerably elevated, but not so roundly and obtusely as that of *Walckenaëra latifrons*, *Cambr.*, and the anterior slope of the elevation is more nearly vertical; the lower part of the clypeus is considerably and roundly prominent. The eyes are in the ordinary position, but, when looked at from in front, that of the fore-central pair is above the straight line of the two lateral pairs; behind each of these last is a longitudinal indentation.

The colour of the cephalo-thorax is dark black-brown, that of the legs and palpi pale yellow, and of the abdomen glossy black.

The radial joint of the palpus is shorter than the cubital, and has its fore extremity, on the upper side, produced into a long narrowish apophysis directed obliquely outwards, imperfectly bifid at its extremity, and with a sharp-pointed, black, spine-like projection issuing outwards, from beneath, near the bifid part. The palpal organs are prominent and complex, with a conspicuous, duplex, black, coiled spine at their extremity.

A single example found among low plants in underwood at Bloxworth, in July, 1863.

WALCKENAERA BECKII.

WALCKENAERA BECKII, *Cambr.*, Trans. Linn. Soc. xxvii., p. 460, pl. 57, No. 44, and xxviii., p. 548.

Length of the adult male 1-16th of an inch.

The caput is but very slightly elevated; the elevation is, however, distinct, and its upper surface is broad and flattish, being

also longitudinally and equally divided by a narrow but distinct groove. A long, strong, longitudinal indentation runs backwards from immediately above and behind each lateral pair of eyes.

The colour of the cephalo-thorax is dark yellowish-brown; that of the legs and palpi yellow; and the abdomen is of a sooty brownish-black hue.

The palpi are slender; the radial joint is shorter, but stronger than the cubital, and its fore extremity is strongly emarginate, forming three short, pointed prominences, two above and one underneath. The palpal organs are prominent, but not very complex; at their extremity is a small, slender, curved, black spine, near which is a prominent semi-transparent mass of membranous substance.

The eyes are very small; those of the hind-central pair are seated, not very far apart, in a transverse line on the upper surface of the elevation of the caput, and are not easy to be seen, except from above.

Several examples were found in an old sewer, which had been closed for thirty years and upwards, at Bloxworth Rectory, in October, 1872. I have also received it from the neighbourhood of London, and from near Dunkeld in Scotland.

WALCKENAERA PICINA.

WALCKENAERA PICINA, *Blackw.*, Spid. Great Brit. and Irel. p. 313, pl. xxi., fig. 228.

The adult male is 1-14th of an inch in length.

The caput is moderately and distinctly elevated, being somewhat similar in form though higher than that of *Walckenaera pumila*, Blackw., and *Walckenaera hiemalis*, Wid. The fore slope of the elevation follows that of the clypeus, which is considerably prominent at its lower part. The eyes of the hind-central pair are seated at the fore-part of the summit of the elevation, and from behind and above each lateral pair a strong longitudinal indentation runs backwards.

The colour of the cephalo-thorax is brownish-black, that of the legs red-brown, and the abdomen black.

The radial joint of the male palpus is stronger than the cubital, and has its fore extremity, on the upper side, greatly produced into a long, curved, tapering apophysis, whose point is directed outwards in front of the digital joint; this joint is not very large. The palpal organs are prominent and complex; they do not contain any very remarkable processes, but have a short, pointed, black, curved, prominent spine at their extremity.

This is not a rare spider. I have found it, frequently, running in sunshine on bright spring and early summer mornings, on iron railings at Bloxworth, and it has also been found in Lancashire, North Wales, and Scotland. The female resembles the male, but wants the elevation of the caput and is slightly larger.

WALCKENAERA PUSILLA.

THERIDION PUSILLUM, *Wid.*, Zool. Misc. Arach. (Mus. Senck.), p. 237, pl. xvi., fig. 9.

WALCKENAERA MINIMA, *Cambr.*, Zoologist 1863, p. 8595.

The male of this minute spider measures no more than 1-22nd of an inch in length.

The caput is moderately elevated, bearing considerable resemblance to that of *Walckenaera picina*, Blackw., though rather less in height, and the front slope is less steep, forming in profile a very obtuse angle with the slope of the clypeus, which is nearly vertical; each side of the elevation, above and behind the lateral pairs of eyes, is broadly and deeply indented, and the eyes of the hind-central pair are seated widely apart at the fore part of its summit.

The colour of the cephalo-thorax is yellowish-brown, that of the legs and palpi yellow-brown tinged with red, and the abdomen is dark sooty brown.

The palpi are short; the radial joint is stronger than the cubital, and is produced at its fore extremity, above and rather on the inner side, into a strong apophysis which curves outwards

over the base of the digital joint, and has a spine-like process beneath its extremity, thus appearing bifid at that part. The radial joint is produced also, but less strongly, on the outer side, its curve being opposed to that of the other apophysis; the extremity of the radial joint appears thus to have had a large, somewhat circular piece taken out of it.

The palpal organs are moderately complex and very prominent. A strong, filiform, red-brown, prominent spine is connected with them, and is very conspicuous near their extremity on the outer side.

I have frequently found this little spider on furze bushes and underwood, as well as among low plants and herbage in woods at Bloxworth and in the neighbourhood.

WALCKENAERA ERYTHROPUS.

ERIGONE ERYTHROPUS, *Westr.*, Aran. Suec. p. 237.

WALCKENAERA BOREALIS, *Cambr.*, Zoologist, 1862, p. 7967.

The adult male measures 1-12th of an inch in length.

The elevation on the caput is moderate, about the same as that of *Walckenaëra pusilla*, Wid., but more massive; and the spider itself is much larger and differs considerably in colours. The indentations on the sides of the elevation, behind the lateral eyes, are also larger, but do not compress the sides so much. The slope of the ocular area, looked at in profile, together with the profile of the clypeus, is nearly the same as that of *Walckenaëra pusilla*. The eyes of the fore central pair, looked at from in front, are above the straight line of the lateral pairs.

The cephalo-thorax is of a glossy, brownish-black colour; the legs and palpi yellowish-red, the latter of rather a paler tinge; and the abdomen glossy, deep brownish-black.

The radial joint of the palpus is stronger than the cubital, and has its upper fore extremity, rather on the outer side, produced into a strong apophysis which curves over the base of the digital joint, its bluntish point directed outwards; from within the curvature there issues a rather conspicuous prominent process, also

with an outward direction. The palpal organs are prominent, moderately complex, and have a circularly curved, filiform, black spine at their extremity. These organs, with the digital joint, form a roundish mass, larger than those of *Walckenaëra picina*, Bl., and *Walckenaëra Beckii*, Cambr.

Found among moss in woods, and occasionally on the walls of the Rectory at Bloxworth, but it is a rare spider.

The types of *Walckenaëra borealis* were found on the Pentland Hills, in Scotland, and their identity with Westring's Swedish spider (*Erigone erythropus*) is undoubted.

WALCKENAERA TRIFRONS.

WALCKENAERA TRIFRONS, *Cambr.*, Zoologist 1863, p. 8589.

Adult male length 1-11th of an inch.

This species may be recognised, at a glance, by the comparatively small size but great distinctness of the elevation on the caput. The fore part of the caput is large, rounded and prominent, and the eminence standing up with a somewhat forward direction and placed towards the occiput, has a rather tuberculi-form appearance; the height of the elevation is moderate; on its sides, behind each lateral pair of eyes, is a deep longitudinal somewhat oval-shaped indentation. In its general form and character the elevation is not much unlike that of most of the foregoing species. When looked at in profile there is a deep cleft or indentation between the summit of the elevation and the beginning of the clypeus.

The colour of the cephalo-thorax is a shining dark black-brown, that of the legs and palpi bright orange-yellow, and the abdomen jet black.

The radial joint of the palpus is much shorter than the cubital, and has two apophyses at its fore extremity; one on the outer side broad, obtuse, and concave, with a red-brown corneous process issuing from its concavity; the other, towards the inner side, longer, but much slenderer, slightly curved, apparently bifid at its extremity, and directed obliquely outwards over the base of

the digital joint. The palpal organs are moderately complex, and connected with them is a very long, slender, prominent, filiform black spine curved in a circular form, and with its long fine point projecting freely outwards; within the coil of this spine is another short stout curved one.

A single example of this very distinct spider was found running in sunshine on iron railings at Bloxworth Rectory, in May, 1862. Since then I have received it from Lord Walsingham, from Merton Hall, Norfolk, and also from the Cheviot Hills where it has been found by Mr. James Hardy, of Old Cambus.

WALCKENAERA NEMORALIS.

WALCKENAERA NEMORALIS, *Blackw.*, Spid. Great Brit. and Irel.,
p. 315, pl. xxii., fig. 230,

Length of the male 1-16th of an inch.

The elevation of the caput is considerable in height, large and round at its summit, which is broader than the base; its direction is very slightly forwards, and its height is equal to half the whole height of the cephalo-thorax at that point. The fore part of the cephalo-thorax, below the elevation, is prominent, and there is thus a considerable cleft between that and the upper part of the elevation; this is very visible in profile, and, in fact, divides the fore part of the cephalo-thorax into two large segments. A strong longitudinal indentation runs backwards from just above, and behind, each lateral pair eyes.

The radial joint of the male palpus is much shorter than the cubital, and has its fore extremity, above, produced into a rather prominent, blunt-pointed and curved, but not very large, apophysis. Another smaller, pointed, prominent apophysis is on outer side, and a third, still smaller, underneath. The digital joint is small, and the palpal organs are prominent and complex, with a small, fine, curved spine at their extremity.

The colour of the cephalo-thorax is deep brown, that of the legs and palpi brownish yellow, and the abdomen, which has its upper side covered with a coriaceous, thickly punctured shield, is

of a dark blackish yellow-brown hue. The female is rather larger than the male and resembles it in colours, but is wanting both in the elevation of the caput, and the coriaceous covering of the abdomen.

Found occasionally in autumn, and spring, among moss and lichens on apple trees at Bloxworth, as well as in Scotland and North Wales.

In its general form it bears considerable resemblance at first sight to *Walckenaëra bifrons*, Bl., but the present species is smaller and differs in colours. The hind-central pair of eyes also are placed on the fore part of the summit of the elevation of the caput, a long way from the rest, while in *Walckenaëra bifrons* they are seated on the front of it, close above the other eyes.

WALCKENAERA LUDICRA.

WALCKENAERA LUDICRA, *Cambr.*, Ann. and Mag. N. H. 1861, 3rd series, Vol. vii., p. 438.

„ „ *Blackw.*, Spid. Great Brit. and Irel., p. 316, pl. xxii., fig. 231.

Length of the male 1-18th of an inch.

This very distinct species cannot be mistaken for any other as yet known in Great Britain, being of an almost uniform pale dull brownish yellow hue.

The elevation on the caput is strong and high, slightly exceeding half the total height of the caput; it is also strongly inclined backwards; the hinder part is well rounded, the summit also rounded and broader than the base, and the front flattish; the latter slopes in the same line as the clypeus, which is considerably prominent a little way above the lower margin. The colour of the elevation is clouded with brown. The palpus of the male is rather short and slender; the radial joint is much shorter than the cubital, but broader; it has a short, pointed apophysis at the fore extremity on the upper side, and both the outer and under side are rather prominent. The digital joint is not large, and the palpal organs are prominent and complex, with a curved

black spine at their extremity. The eyes are in the usual position, and behind each lateral pair is a small longitudinal indentation.

The female is slightly larger than the male, which it resembles in colour, but wants the elevation on the caput, this part being merely a little more convex than usual.

Found, in some seasons, abundantly, during May and June, on furze bushes when in bloom, in sheltered places on heaths bordering on the woodlands at Bloxworth, and in other similar localities in Dorsetshire as well as in Hampshire.

WALCKENAERA ALTIFRONS.

WALCKENAERA ALTIFRONS, *Cambr.*, Zoologist 1863, p. 8593, and Trans. Linn. Soc., pl. xxviii., p. 453, pl. xxxv., No. 33.

The male measures 1-15th of an inch in length.

The elevation on the caput is high, but (owing to the greater height of the normal portion) not quite equal to half the whole height of the facial space; it has, when looked at in profile, a somewhat sub-conical form, rising from the whole area of the caput; but, looked at from in front, the summit (on the highest part of which the hind-lateral pair of eyes are seated) is broader than the base; behind each lateral pair of eyes is a strong, horizontal indentation, and the frontal slope of both the elevated part and the clypeous forms one pretty even line, broken by a slight prominence at the fore-central eyes.

The palpus of the male is moderately long; the radial is about half the length of the cubital joint, and has its fore extremity on the upper side produced into two apophyses, the inner one of which is much the largest and strongest, and ends in a fine point; both are directed obliquely outwards.

The colour of the cephalo-thorax is blackish-brown; that of the legs and palpi are orange-yellow, the latter rather the palest; and the abdomen is black.

Found very rarely on underwood at Bloxworth, in June; and also near Lyndhurst, Hampshire.

The female is rather larger, but resembles the male, excepting in the absence of the elevation of the caput.

WALCKENAERA FRONTATA.

SAVIGNIA FRONTATA, *Blackw.*, Lond. and Edin. Phil. Mag., 3rd series, Vol. iii., p. 105.

WALCKENAERA FRONTATA, *Blackw.*, Spid. Great Brit. and Irel., p. 317, pl. xxii., fig. 232.

The length of the male is 1-12th of an inch.

This remarkable species may be easily recognized by the elevation on the caput being placed quite at the extremity of the fore part, and forming, in fact, a kind of sub-conical continuation of it, directed rather forwards, and surmounted by a tuft of hairs. The cephalo-thorax is of unusual length. The eyes of the hind central pair are close together behind the base of the elevation; the lateral pairs are placed on each side of the fore part of the normal portion of the caput, and the fore centrals are on the front of the summit of the elevation; these last are exceedingly difficult to be seen, so much so that for many years it was supposed by Mr. Blackwall to be a six-eyed spider.

The palpus of the male has its radial stronger than the cubital joint, and the fore extremity of the upper side of the former is produced into a curved, tapering apophysis, which ends in a sharp point directed outwards over the base of the digital joint. The palpal organs are prominent and complex, but do not present any very conspicuous processes.

The colour of the cephalo-thorax is brownish-black, that of the legs and palpi reddish-brown, and the abdomen is glossy and black.

The female resembles the male in colours, but is a little larger, and shows no trace of the peculiar formation of the caput observed in the other sex; the fore-central eyes are also easily seen, though smaller and darker than the rest,

Not rare, running on iron railings in sunshine, in May and June, at Bloxworth Rectory. I have also received it from various parts of England, Scotland, and North Wales.

WALCKENAERA ACUMINATA.

WALCKENAERA ACUMINATA, *Blackw.*, Spid. Great Brit. and Irel., p. 289, pl. xx., fig. 203.

This fine species is one of the most singular of all yet described, in the form of the fore part of the caput. The fore extremity of this part is elevated into a vertical, slender, stalk-like process, whose height is equal to about two-thirds of the total length of the cephalo-thorax. This curious eminence is a little bent forwards towards the extremity. Two pairs of largish eyes are placed, one pair on each side of a slight enlargement near the middle; the rest of the eyes are on and near the summit, which is enlarged, of a somewhat rounded form, and furnished with a few short strong hairs; the summit is divided by a transverse furrow, into two segments, an upper and a lower one, the latter being the smaller of the two.

The radial joint of the male palpus is much shorter and stronger than the cubital (which is rather long and slightly clavate), and has its fore extremity produced into three apophyses; one on the inner side (the longest of the three) is curved, with its point directed outwards, and a process near its base on the outer side; while the outer one is shorter, stronger, and obtuse. The digital joint is large, and the palpal organs are prominent and complex, with a strong, circularly curved spine, towards their extremity on the outer side.

The colour of the cephalo-thorax is dark, reddish-brown, that of the legs and palpi reddish-yellow, and the abdomen black.

The female is larger than the male, but resembles it in colours. The fore part of the caput is elevated moderately, in a simple acute-conical form, with the eyes closely grouped together on and about its summit.

This remarkable spider is of rare occurrence, among dead

leaves in woods, and among moss and heather at Bloxworth, and Warmwell. I have also received it from Mr. C. W. Dale, of Glanvilles Wootton; and it occurs more abundantly under stones, among moss and short herbage in woods and on wastes in the North, and other parts, of England, as well as in Scotland, and Wales.

GENUS PACHYGNATHA, *Sund.*

Cephalo-thorax large and of almost equal convexity throughout.

Eyes in two nearly straight transverse rows, forming a central group of four in a small square, with a lateral pair placed slightly obliquely at some distance on each side.

Falces long, very powerful, and divergent.

Maxillæ long, rather broadest, and obliquely truncated on the outer side, at their extremities, and inclined towards the labium.

Labium large, of a sub-triangular form, with the apex sometimes rounded.

Legs rather long, slender, and entirely devoid of spines. Their relative length is 1.2.4.3.

Palpi of the males have the palpal organs of a peculiar and very uniformly similar structure, consisting of a large, more or less globular, corneous lobe with a diversely formed process issuing from its fore part. In this, as well as in the narrow, irregular form of the digital joint, there is a marked similarity to spiders of the *Epeirid* genus *Tetragnatha*, Linn.

This is a small group of brightly-coloured, and prettily marked spiders, some of them ornamented with silvery hues.

Their snare and mode of life are like those of *Theridion*. They may be easily distinguished from *Neriëne* and *Walckenaëra* by their gayer colouring; from *Theridion* by the second pair of legs being longer than the fourth; and from the numerous species of *Linyphia* by the absence of spines on the legs; while their form of snare separates them at once from the Family *Epeirides*, to which last, however, they bear several strong structural marks of affinity.

Three species only are as yet known to Britain, and all three are found in Dorsetshire.

PACHYGNATHA CLERCKII.

PACHYGNATHA CLERCKII, *Sund.*, Vet. Akad. Handl. 1829, p. 208,
and 1832, p. 258.

„ „ *Blackw.*, Spid. Great Brit. and Irel., p.
318, pl. xxii., fig. 233.

The length of the male is $2\frac{3}{4}$ lines.

The cephalo-thorax is of a pale yellowish, red-brown colour, divided longitudinally by a central, and two lateral black stripes; and the oblique indentations between the caput and thorax are also marked by a black line. The falces are of great strength, long, widely divergent, and armed with strong teeth on their inner sides; the fang is long, and has a kind of tooth at the middle of its inner side, the outer side at that part being indented. The legs and palpi are of a pale yellowish hue slightly tinged with brown. The abdomen is brownish-black on the upper side, with a broad, pale, yellowish band down the centre, tapering to a point above the spinners, this band has a longitudinal, central, black line, broken into by several, somewhat angular, small spots or markings; there is also a lateral band, of the same colour as the central one, on each side. The under side is yellowish-brown, with a broad, central, longitudinal, brownish band.

The palpi of the male are long, and the radial is larger than the cubital joint; the digital joint is of a somewhat bifid form, one branch being much larger and stronger than the other. The palpal organs consist of a large globular bulb, with a pointed and somewhat twisted process in front.

The female is larger than the male and less vividly and distinctly marked, but in other respects very nearly resembles it, except in the less development of the falces.

Found, but not abundantly, under stones and among moss and rubbish in woods and damp places at Bloxworth and other

localities in Dorsetshire. It seems to be also generally distributed in England, North Wales, and Scotland.

PACHYGNATHA LISTERI.

PACHYGNATHA LISTERI, *Sund.*, Vet. Akad. Handl., 1829, p. 210.

„ „ *Blackw.*, Spid. Great Brit. and Irel. p. 320, pl. xxii., fig. 234.

This spider bears a strong general resemblance to *Pachygnatha Clerckii* in its form and structure, but is much more brightly coloured, and also smaller. The adult male measures about 1-7th of an inch in length. The cephalo-thorax is bright red brown with a longitudinal, central black band, and a very broken, black, submarginal bar on each side. The legs and palpi are yellowish; and the abdomen has, on the upper side, a very broad, dark red-brown, central, longitudinal band, marked with some black markings, as well as some ill-defined white angular markings, along the middle; and on each side of the abdomen is a broad, irregular, yellowish band whose inner margin is nearly white. The palpi of the male are very like those *Pachygnatha Clerckii*.

The female is larger than the male, of a lighter hue, but is, if anything, more distinct in the markings on the upper side of the abdomen.

Occasionally abundant, towards the end of the summer, among underwood at Bloxworth and in the neighbourhood. Mr. C. W. Dale has met with it at Glanville's Wootton; it occurs also in other parts of England, and in North Wales.

PACHYGNATHA DEGEERII.

PACHYGNATHA DEGEERII, *Sund.*, Vet. Akad. Handl., 1829, p. 211, and 1832 p. 259.

„ „ *Blackw.*, Spid. Great Brit. and Irel., p. 321, pl. xxii., fig. 235.

This pretty species may be at once distinguished from the two

foregoing by its much smaller size, and generally darker hue. The length of male is about 1-8th of an inch, or rather less. The cephalo-thorax is deep black-brown, and the legs are pale yellowish brown. The abdomen has its upper side almost entirely occupied by a very broad, deep blackish, longitudinal band dentated or sinuous on its outer margins, and with a series of silvery-white, somewhat angular bars along the middle, forming at times a somewhat broken stripe; the sides are also occupied by a white band of silvery lustre. These white parts are, in some examples, of a golden hue; and in others the sides are tinged with red.

The palpi, as well as the falces, are exceedingly similar in form and structure to those of the two preceding species.

The female is larger than the male, and, in general, rather less dark coloured and not so distinctly marked.

An abundant spider, during the greater part of the year, among grass in fields, and in many other situations, as well as on plants and bushes, particularly furze bushes when in bloom.

GENUS TAPINOPA, *Westr.* LINYPHIA, *Bl.*, in part.

This genus has been formed by Westring for a single remarkable spider, included by Wider and Blackwall in the genus *Linyphia*. The cephalo-thorax rises considerably before, but this is caused by a sort of thrusting up by the large and powerful falces, not by the really greater height of the caput. The occiput however is a little gibbous.

The eyes form a broadish transverse-oval figure close to the insertion of the falces. Those of the fore-central pair being the largest, and not nearly contiguous to each other.

The legs are rather long, not very strong, and are furnished with hairs and a few erect bristles only. Their relative length is 1.4.2.3. Those of the first pair being distinctly the longest.

The *Maxillæ* are long, strong, straight, of a somewhat broad-oblong form, rather rounded at their extremities; and the *Labium* is semicircular.

The *falces* are long, powerful, perpendicular, and divergent at their extremities, with some long strong teeth in two rows on their inner surface. The fang is long and a little bent at its point.

Three species are described as British, one only having as yet been found in Dorsetshire.

TAPINOPA LONGIDENS.

LINYPHIA LONGIDENS, *Wider.*, Zool. Misc. Mus. Senck, Bd. i. p. 270. Taf. 18. fig. 5.

„ „ *Blackw.*, Spid. Great Brit. and Irel. p. 227, pl. xvi. fig. 150.

The length of the male is 1-7th of inch.

The cephalo-thorax is of a reddish yellow-brown colour, with a brownish-black band along each side, and the upper part of the caput is ornamented with numerous long black bristles, directed forwards. The legs are of a paler, clearer yellowish hue, hairy, and with a few erect bristles, but no spines. The abdomen is of short-oval form, and considerably convex above; it is of a dull brownish-yellow colour, more or less thickly mottled with small white cretaceous looking spots, and marked on the upper side with two longitudinal rows of large blackish spots or blotches, the rows converging towards the spinners; and on each side is a longitudinal, bent, blackish-brown bar, which joins in, at the hinder extremity, with one of the posterior blotches.

The palpi of the male have the radial and cubital joints both short, and the latter has a long prominent bristle at its fore extremity. The digital joint is large and is considerably produced at its base, the production being curved, with its extremity directed outwards, and notched or bifid.

The palpal organs are prominent and complex.

The female is larger than the male, but resembles it in colours and markings; and connected with the genital aperture there is a prominent, conspicuous, curved process of very large size, with its extremity somewhat coiled or re-curved.

Found, but rarely, among heather and under old turves, on Bloxworth Heath in spring and early autumn. It is also found in other parts of England, as well as in Scotland and Wales.

GENUS LINYPHIA, *Latr.* LINYPHIA, *Blackw.*, in part.,
 + NERIENE, *Blackw.*, in part., +
 THERIDION, *Blackw.*, in part., +
 BATHYPHANTES, *Menge*, in part, and
 BOLYPHANTES, *Menge*.

The genus *Linyphia* comprises a large assemblage of small, and moderate sized spiders, most of which have the abdomen very convex above (except in some males) and generally ornamented with a distinctive pattern ; but the colours are usually of a sober kind, confined commonly to white, black, and brown of various shades, with different tints of a yellowish hue ; a few species have some richer colouring as *Linyphia peltata*, *Wid.*, *L. hortensis*, *Sund.*, *L. marginata*, *C. L. Koch*, *L. triangularis*, *Clorek.*, and *L. clathrata*, *Sund.* In general the *caput* is not specially raised above the thoracic level, though in the males of some species it rises gradually from it, and projects considerably forwards ; and in one, *Linyphia alticeps*, *Sund.*, it is drawn out into a conical point between the eyes.

The *maxillae* are usually straight ; tolerably long and strong ; and either parallel to each other, or a little inclined to the *labium*, which is semicircular or subtriangular.

The *eyes* are of moderate size, placed in two transverse rows, or three groups, generally well removed from the base of the *falces*. A central group of four, forms nearly a square with a pair, the eyes of which are placed obliquely, and close to each other, on either side.

The legs are long, slender, armed with distinct spines of varied length and strength in different species ; their relative length is 1.2.4.3. or 1.4.2.3.

The snares of *Linyphia* consist of a horizontal sheet of web suspended from various points on the upper side, by vertical lines to the different surrounding objects, as the leaves of trees and shrubs or stems of plants, and similarly braced down to other objects underneath. The spider usually lies in wait in an inverted position beneath the horizontal sheet. Numerous lines are spun in all directions above, which serve to entangle flies and other insects, and these, falling down in their efforts to get free, are caught by the horizontal sheet and quickly captured.

The various species of *Linyphia* are found on trees, bushes, shrubs, and herbage, as well as in caverns, crevices, and holes of rocks and walls; also in unused rooms and old buildings, and under stones. Among them are some of our commonest spiders. The beautiful objects so conspicuous on heather, and furze bushes, when covered with dewdrops, on a bright, fresh, early autumnal morning, are mainly the webs of *Linyphia montana*, Clerck. at times the bushes appear to be covered with them as if by magic, scarcely one perhaps having been visible on the previous afternoon; and without doubt almost all have been the product of the previous night's labours.

In distinguishing spiders of this genus from those of other genera of the same family (*Theridiides*) there will be little difficulty (excepting in one or two groups closely allied to *Neriène*) if the spines on the legs be looked for. Wherever distinct spines are found, there, as a rule (more especially if the legs of the second pair are longer than those of the fourth), we may conclude that we have a *Linyphia*, and not a *Theridion*, or one of any of its allied genera, nor yet a *Neriène*, *Walckenaëra*, *Tapinopa*, or *Pachygnatha*.

Sixty-eight species of *Linyphia* have been found in Britain; and of these forty-three have occurred in Dorsetshire.

It is probable that on a revision of this genus (which is much needed) several good genera will be established, including perhaps those, of Herr Menge, mentioned in the synonyms above given.

LINYPHIA FRENATA.

LINYPHIA FRENATA, *Wider., Blackw., Spid.* Great Brit. and Irel.

p. 228, pl. xvi., fig. 151.

The male measures 1-8th of an inch in length.

The cephalo-thorax is of a pale, dull, yellowish hue, with a longitudinal black band on each side, near the lateral margin. The caput is rather elevated and prominent, the summit being rounded and clothed with numerous curved, bristly, black hairs, directed forwards. The legs are long, slender, hairy, armed with erect spines, and of a yellowish-brown colour, with several dull, dark-coloured annuli. The abdomen is exceedingly convex above and projects greatly over the cephalo-thorax; its colour is a pale, reddish-brown, pretty thickly mottled above with white cretaceous looking spots, and along the middle of the hinder half is a series of several angular black lines, the first two or three broken and widely divided at the vertices, being in fact only elongated spots. The sides are marked with some irregular black streaks.

The palpi of the male are like the legs in colour; the radial joint is stronger than the cubital, but both are short, and have some prominent bristles in front; the digital joint is of a somewhat irregular form, and the palpal organs are prominent, complex, and turned outwards. The falces are long, and divergent at their extremity.

The female is larger than the male, resembling it in colours and markings, but wanting the prominent development of the fore part of the caput, and her legs are shorter.

A rare spider among herbage and heather on the sides of earthy ridges and banks in autumn at Bloxworth. Mr. Dale has met with it at Glanvilles Wootton; and it has also been found in Yorkshire.

LINYPHIA THORACICA.

LINYPHIA THORACICA, *Wid.*, Zool. Misc. Arachn., p. 254 (261),
pl. xvii., fig. 10.

„ CAUTA, *Blackw.*, Spid. Great Brit. and Irel., p. 220,
pl. xv., fig. 145.

Length of the male about 2 to 2½ lines.

The caput (of the male) is rather elevated and prominent, the clypeus projects forwards below, and the ocular area has a few prominent bristly hairs. The cephalo-thorax is of a brownish yellow colour strongly suffused with reddish-brown on the fore part; the hinder extremity of the caput is blackish and sends backwards a longitudinal medial black bar, and the lateral margins of the thorax are broadly black. The legs are long and slender; the spines tolerably numerous, and some of them rather long, but easily broken off. The colour of the legs is yellowish, annulated more or less distinctly with blackish-brown; relative length 1.2.4.3.

The palpi of the male are short and slender, except the digital joint which is large and of irregular form. The cubital joint has a long strong bristle projecting from the fore part of its anterior extremity, and the radial (which is greatly produced at its fore extremity) has one on its outer side. The palpal organs are complex, and enormously developed; and the spider may be distinguished at a glance from all its allies by a double-coiled, slender, filiform, black spine, which surrounds the palpal organs with its large and conspicuous orbit.

The abdomen is of a dull brownish-yellow hue, thinly mottled with white spots, and with a very distinctive pattern on the upper side formed by black spots and lines; the latter, on the hinder half, form a longitudinal series of obtuse-angled, diminishing triangles with the apices (which are sometimes defective) directed forwards, and looking like greatly dilated arrow-heads; the sides are also marked with two or three short, oblique, connected black lines or stripes. On the under side are several rather conspicuous white spots, in a small group, just in front of the spinners.

The female is larger than the male, but resembles it in markings and colours, the latter, however, being lighter and less distinct.

This is not an uncommon spider on the trunks of ivy-covered trees, as well as in old wood-stacks and outhouses, at Bloxworth, and in many other localities in Dorset. It is also found in other parts of England, Ireland, Scotland, and Wales.

LINYPHIA LEPROSA.

LINYPHIA LEPROSA, *Ohlert*, *Die. Aran. d. Prov. Preuss.*, p. 47.

„ CONFUSA, *Cambr.*, *Trans. Linn. Soc. xxvii.*, p. 427, pl. 55, No. 21, a.b.c.d.e.f.g.

The adult male measures about 1-7th of an inch in length.

The cephalo-thorax is of a dark brownish colour, tinged with yellow; the legs are slender, armed with numerous long and conspicuous spines, of a brownish-yellow hue tinged with red-brown, and occasionally faintly annulated with blackish-brown. The *abdomen* of the female is particularly convex above, and projects over the base of the cephalo-thorax, that of the male is slenderer; it is of a dull, shining, pale yellowish-brown colour on the upper side, freckled with small whitish spots; and along the middle is a series of angular blackish lines, whose ends, in the female, often form a spot or blotch. These angular lines are strongest in the male, and the paler intervals then form a series of curved or slightly angular lines. The sides are brown-black, and are marked with a longitudinal curved yellowish-white line, sometimes broken off in the middle, the hinder part passing over the abdomen, some little distance above the spinners, and meeting the corresponding lateral line on the opposite side; the under side is also brownish-black.

The palpi are short and slender; the cubital joint has a long, slightly bent, tapering, finely pointed, prominent bristle at the fore extremity on the upper side. This joint, as well as the radial, is very short, but the latter is the stronger. The digital joint is rather large, and has a strongish conical prominence at

its base on the inner side, and another, much smaller, one on the outer side; the palpal organs are greatly developed and complex, with various curiously-shaped prominent corneous processes.

The female is larger than the male, and is remarkable for the large size and form of the process connected with the genital aperture. This process is a notable feature in the female structure of many spiders, but especially in that of females of the genus *Linyphia*, and affords excellent characters for the distinction of the species.

Linyphia leprosa is one of our most abundant spiders, being found plentifully nearly all the year round at Bloxworth, and in other localities, in outbuildings of all kinds, lofts, faggot ricks, wood stacks, holes and crevices in walls and trees, especially where the latter are thickly overgrown with ivy. It appears to be equally common throughout the south of England, and is also found in Scotland. Different individuals (of both sexes) often vary considerably in size, some being both larger and smaller than the dimensions from above.

LINYPHIA ZEBRINA.

BATHYPHANTES ZEBRINUS, *Menge*, Prouss. Spinn. I., p. 113, pl. 20, Tab. 39.

The length of the male is 1·9th of an inch, and the female is rather larger.

This spider is closely allied to *Linyphia leprosa* Ohl., and resembles it very nearly both in colours and markings. It is, however, generally rather smaller; though as *Linyphia leprosa* varies considerably in size, probably the present species would be found to vary also if a number of examples were compared together. Among other distinguishing characters the following appear to be the chief, and are amply sufficient for the easy determination of the species. The *legs*, which are occasionally annulated in *Linyphia leprosa*, have no trace of annulation in any one of about twenty examples examined. The *palpi* (of the male), on the cubital

joint of which, in *Linyphia leprosa*, is a long, tapering, slightly sinuous, prominent bristle, has only a short, very slender, and inconspicuous one. The radial joint is rather more produced on the upper side. The digital joint is smaller, and has no pointed prominence at its base, where there is a very marked and characteristic one in *Linyphia leprosa*. The palpal organs are of quite a different structure, far less prominent, less complex, and with less strong processes.

The eyes are rather large, seated on black spots, and more closely grouped together than in *L. leprosa*. The posterior row is straight, and the interval between the eyes of the hind-central pair is greater than that between each and the lateral eye next to it.

With respect to the markings on the abdomen, these are exceedingly similar in the two species; there are, however, in the present spider scarcely any white spots on the dull yellowish-brown ground colour; and the dark-brown, transverse, angular bars are usually more distinct and perfect, and uniform in size throughout, *i.e.*, their extremities do not terminate (as frequently do those of *Linyphia leprosa*) in a diffused patch or blotch. The process connected with the genital aperture of the female is smaller and much less prominent.

Examples of both sexes of this spider have been in my possession for several years past; some of them were found in woods and shrubberies at Bloxworth; others were received from the North of England and from Scotland, and were seen at once to be, though remarkably similar in many respects to *Linyphia leprosa*, yet different in several points. These examples were, however, shortly afterwards mislaid, and it is only very lately that they have come to light, and are now for the first time recorded as British.

It is probable that *Linyphia zebrina* is a tolerably abundant spider in this neighbourhood. At the beginning of February in the present year I found three examples of it, dead, inside an empty bottle, which had been thrown into the shrubbery; these

spiders (with several others of different species) had crawled into the open mouth of the bottle, evidently thinking to find a safe place of shelter, but, on the contrary, it proved a prison, from which there was scarcely a chance of escape, owing to the form of the neck and shoulders of the bottle.

LINYPHIA MINUTA.

LINYPHIA MINUTA, *Blackw.*, Spid. Great Brit. and Irel., p. 218, pl. xv., fig. 144.

This spider so nearly resembles *Linyphia leprosa* Ohl. in size, colours and markings, that any detailed description of it is quite unnecessary. It will therefore suffice to note one or two differing characters by which the present spider may be readily distinguished from *Linyphia leprosa*, and which will also distinguish it from *Linyphia zebrina*, Menge.

In the present species the occasional faint annulation of the legs of *Linyphia leprosa* is replaced by constant and very distinct annuli. This difference applies to both sexes. In the male the tapering pointed bent bristle at the fore extremity of the upper side of the cubital joint is represented by a strong spine-like bristle issuing from a minute tubercle, slightly sinuous, of equal size throughout, and obtuse at its end, or, rather, terminating suddenly in a point.

The female is more difficult to distinguish, excepting by the distinct annulation of the legs. The process, however, connected with the genital aperture differs a little in its structure.

This spider is a rare one at Bloxworth, though met with in situations similar to those in which *Linyphia leprosa* is found, and I have not yet met with it elsewhere in Dorsetshire.

In the north of England the present is a common spider, while *L. leprosa* is a much scarcer one. It is also found in Scotland and Wales.

LINYPHIA TENEBRICOLA.

LINYPHIA TENEBRICOLA, *Wider.*, Zool. Misc. Mus. Senck., p. 260
(266), pl. xviii., fig. 2.

„ TENUIS, *Blackw.*, Spid. Great Brit. and Irel., p. 230,
pl. xvi., fig. 152.

„ TERRICOLA, *Blackw.*, l.c., p. 231, pl. xvi., fig. 153.

A very variable spider both in size as well as in depth and distinctness of markings. The male measures from 1-10th to 1-12th of an inch in length. It is of very slender form. The cephalothorax is of a more or less dark yellowish-brown colour; the legs and palpi are yellow tinged with brown; the latter however have the radial and digital joints (with the palpal organs) of a black-brown colour. The spines on the legs are nearly erect and tolerably conspicuous. The abdomen is of a dull yellow-brown colour above, more or less distinctly mottled with small white spots, and with a longitudinal central series of angular black lines whose ends generally form roundish blotches; the sides and underside are black, and the former have each a horizontal, curved, whitish-yellow line meeting each other just above the spinners; this line is frequently interrupted in the middle, and often represented by two mere spots or blotches. The cubital and radial joints of the palpi are short, the latter the strongest, and furnished with a thin tuft of prominent bristly hairs on the foreside, the extremity of which is rather prominent. The digital joint and palpal organs form a roundish mass of moderate size; the latter are prominent and complex.

The varieties of this little spider are very numerous; some males have the abdomen almost black, excepting a marginal whitish line round the fore part, and a lateral longitudinal yellowish-white line; in others the white speckling predominates in both sexes, and the black angular lines on the upper side, terminating on each side in black blotches, are very conspicuous; in others again the lateral white line is broken off in the middle, and in some (as above remarked) it consists of merely two elongate spots.

The darker specimens constitute *Linyphia tenuis*, Blackw., the paler ones *Linyphia terricola*, Blackw. The female resembles the male in colours and markings, but the abdomen is very convex above, and projects over the base of the cephalo-thorax, and is usually more distinctly marked than that of the male.

Excepting in being very much smaller and brighter coloured *Linyphia tenebricola* bears a very near general resemblance to *Linyphia leprosa*, Ohl. ; while, however, the latter spider is seldom found excepting in old buildings, wood stacks, crevices, under blocks of stone, and other similar places of shelter, *Linyphia tenebricola* is never found in such situations, but is one of our commonest spiders among grass and other herbage in most localities in England. It is also met with in Ireland, Scotland, and Wales. The immature examples are frequent aeronauts, and sometimes the adult males also, doubtless contributing considerably to the gossamer lines seen on fine days in spring and autumn. The adult males may also often be found during the whole of the summer, running actively on the surface of the bare ground, as well as on iron railings, palings, and many other objects, by which they are arrested in their aerial excursions.

LINYPHIA FREDERICI, sp. n.

Adult male, length scarcely more than 2-3rds of a line.

The *cephalo-thorax* is yellow-brown with a distinct broadish black marginal line, and some irregular, converging lines on the sides of a more dusky hue; the occiput also has a somewhat hexagonal, central, dusky patch emitting a fine black line from the middle of both its anterior and posterior extremities, and from each eye of the hind-central pair a short blackish streak runs backwards. The thoracic region is rather gibbous, and although (when looked at in profile) its summit is not much raised above that of the ocular area, there is a considerable depression between those two points.

The *eyes* are of moderate size, and occupy the whole width of the fore part of the caput. The interval between those of the hind-central pair is scarcely an eye's diameter, while that which separates each of them from the lateral eye next to it is less; those of the fore-central pair are nearly, if not quite, contiguous to each other. The ocular area is but slightly prominent; and the height of the clypeus is considerably less than half that of the facial space.

The *legs* are tolerably long, slender, 1.4.2.3, and of a pale yellow-brown colour. They are furnished with hairs, and have a long slender spine on each of the genual joints, with two others in a longitudinal line on the upper side of each of the tibiæ.

The palpi are short, and similar to the legs in colour. The radial is stronger than the cubital joint, and is a little spreading at its extremity. The cubital has a short fine bristle directed forwards from its fore part. The digital joint is small with a lobe on its outer side. The palpal organs are rather complex, and have a strongish, and rather long, curved process projecting downwards near their outer side.

The *falces* are moderately long, rather weak, straight, and a little directed backwards. Their colour is like that of the cephalo-thorax.

The *sternum* is of a short heart-shape, considerably convex, and of a dark blackish-brown hue.

The *abdomen* is small and oviform; its colour is black, freckled with minute yellow-brown points, probably not discernible except when in spirit of wine. The hinder part, on the upper side, shews a series of some rather conspicuous transverse folds in the integument. Two others, corresponding to the ordinary transverse curved or angular lines, even more conspicuous, are also visible underneath, a little way from the spinners. The significance of these folds has been before remarked upon.

A single example of this spider was found among dead leaves at Warmwell, near Dorchester, in the spring of 1875, by my nephew, Frederick O. P. Cambridge.

LINYPHIA OBSCURA.

LINYPHIA OBSCURA, *Blackw.*, Spid. Great Brit. and Irel., 244, pl.

xvii., fig. 162.

Length of the adult male 1-12th of an inch).

This spider is nearly allied to the *Linyphia tenebricola*, Wid., which it also resembles in the general pattern on the abdomen; it may, however, be easily distinguished if the following differences be carefully noted. The cephalo-thorax is much darker, being of a dark brown hue. The cubital joint of the male palpus has a much longer, and stronger prominent bristle on its anterior side. The digital joint has a conspicuous and prominent, sharply conical, slightly curved, horn-like spur at its base; and the palpal organs are more prominent, comprising several conspicuous and projecting processes. The legs also are of a brighter colour, being yellow, tinged with orange-red, and the spines are stronger and more erect. The abdomen of the male is often of an almost uniform dark blackish hue, with scarcely any pattern visible; these examples are probably those which have been some little time adult; younger ones have the central longitudinal series of angular black lines preceded by a somewhat cruciform, black marking formed by the coalition of a short longitudinal bar with a transverse angular one. The lateral, whitish, horizontal, line is stronger than that in *Linyphia tenebricola*, and is lower down on the side, leaving above it, towards the fore extremity, a large, somewhat quadrate, oblong black patch. This (especially in females) is a very conspicuous and striking character.

The whole spider is of a less slender build than *Linyphia tenebricola*; and the female resembles the male, but is larger and has a less frequent tendency to obscuration of the abdominal markings.

This is a rare spider on low plants and underwood at Bloxworth, but is more frequent in Scotland. I have also received

it from near Gloucester; and it has been met with in North Wales.

LINYPHIA VARIEGATA.

NERIENE VARIEGATA, *Blackw.*, Spid. Great Brit. and Irel., p. 282, pl. xix., fig. 195.

The male measures from 1-12th to 1-13th of an inch in length.

The cephalo-thorax is yellow, with a slender marginal black line, and a central longitudinal, rather variable, black stripe, which widens from the thorax to a little behind the eyes, where it terminates; and occasionally there are some short, lateral, converging, blackish lines in the thoracic region. The legs are yellow, annulated with black, and the abdomen is yellowish, with a few small white spots above and on the sides. On the fore part of the upper side is a conspicuous black marking, sometimes rather cruciform, sometimes arrow-headed, followed by a row of black spots on each side of the medial line, terminating with two or three curved, or subangular, black lines above the spinners. The black spots on either side are also occasionally united in pairs by slender angular lines; but these are usually obsolete. The sides are marked and streaked with black.

The spines on the legs are distinct, though not very strong. At the fore extremity of the upper side of the cubital joint of the male palpus is a very long, projecting, somewhat spine-like black bristle. The digital joint is rather large, and has a large lobe on its outer side, and a prominent, but not very large, process at its base. The palpal organs are prominent and complex. The female is rather larger, but resembles the male in colour and markings.

This pretty little spider is rather rare in spring, late summer, and autumn, among long grass and herbage on waste lands, and in sandy-heath situations at Bloxworth. It is very abundant near Southport, in Lancashire; and has been met with in Yorkshire, North Wales, and Scotland.

LINYPHIA ALACRIS.

LINYPHIA ALACRIS, *Blackw.*, Spid. Great Brit. and Irel., p. 235, pl. xvii., fig. 157.

The male measures 1-11th of an inch in length.

This spider is nearly allied to *Linyphia tenebricola*, Wid., but is larger and differs in the pattern on the abdomen, as well as in the structure of the palpal organs; the palpi being also much larger.

The cephalo-thorax is brownish-yellow, with dusky margins. The legs are long, slender, yellow, and conspicuously spinous. The palpi are also long, slender, and similar to the legs in colour. The radial and cubital joints are short; the former is the stronger, and from its base in front issues a long, tapering, prominent bristle, while a similar, but longer one projects from the fore extremity in front of the other. The palpal organs are complex and prominent, the digital joint being of rather an irregular form. The abdomen is yellowish-brown, speckled with white spots, and along the middle of the upper side is a series of angular black bars, whose fine extremities frequently reach the sides, which are black; each side being marked with a longitudinal, curved, whitish-yellow line; the two lines uniting above the spinners. The two foremost of the central angular bars are much stronger than the rest, and sometimes form triangles running into each other; and in other examples, when the extremities of the angular lines are shortened, a narrow longitudinal dentated band, followed by two or three angular lines, is all the pattern that remains. The under side is black-brown.

The processes of the palpal organs of the male are more prominent and conspicuous than those of *Linyphia tenebricola*. The female is larger than the male, and generally has the pattern on the abdomen more perfect and distinct than that of the male; and the genital process is prominent and conspicuous.

Linyphia alacris is a rather rare spider among moss, low plants, and herbage in open places in woods, at Bloxworth, in May and

June; but appears to be frequent in many other localities, both in England and Scotland.

LINYPHIA CIRCUMCINCTA.

LINYPHIA CIRCUMCINCTA, *Cambr.*, Trans. Linn. Soc. xxvii., p. 423.

Length of the adult female, 2 lines.

The cephalo-thorax is pale dull yellowish, with a longitudinal central black line, bifid at its fore extremity, and some convergent dusky lines on the sides. The eyes are on black, slightly tuberculate spots. The legs are of a clearer yellow than the cephalo-thorax, and the spines are rather short and not very strong. Their relative length is 1.4.2.3. The abdomen is very convex above, especially at the fore part, which projects considerably over the base of the cephalo-thorax. The upper side is white, with a central, longitudinal, brown band, tapering to a mere line on the hinder part. On each side of this band and parallel to it, is a row of brown spots, varying in size and distinctness in different examples. These spots are generally united in pairs, by very fine dark, angular lines, whose apices join in with the central band. The sides are dark-brown, marked with a conspicuous, horizontal, straight, white band, which runs round above the spinners without interruption, and thus divides the abdomen into two parts, an upper and a lower one. The under side is also dark brown, marked with white spots and curved lines, the spinners being engirt with a zone of seven or eight well-defined, white spots, forming a horse-shoe, whose open side is in front.

A few examples of this spider were found among coarse grass and sedge, in a swamp, at Bloxworth, in May, 1863, but I have never met with it since.

LINYPHIA SETOSA.

LINYPHIA SETOSA, *Cambr.*, Zoologist 1863, p. 8578.

The adult male of this very distinct and rare spider measures 1-10th of an inch in length.

The caput is rather raised and prominent before, and has, at its summit, a tuft of curved, strong, bristly hairs, directed forwards. The colour of the cephalo-thorax is brownish-yellow, rather clouded with brown towards the margins; the ocular area is black. The clypeus is high, and prominent just above the falces. The legs are long, rather slender, of a brownish-yellow colour, and the spines are moderately long and strong; the relative length is 1.2.4.3. The palpi are short, slender, and similar to the legs in colour. The cubital and radial joints are short; the latter is the strongest, and has a tuft of strongish, bristly hairs in front, the former has a very long, tapering bristle, directed forwards from its fore extremity. The digital joint is of an irregular form, with a prominent lobe on the outer side, and a short, curved, conical prominence at its base on the inner side. The palpal organs are exceedingly prominent and complex. A dark red-brown, curved process projects from their base over the base of the digital joint, and was mistaken, at first, for a prominence, issuing from that joint. There are other conspicuous spines and processes, the most conspicuous being a large one projecting outwards from near the extremity of the palpal organs.

The falces are moderately long and strong, and divergent at their extremities.

The abdomen is of a pale, dull, yellowish-brown colour above, with a longitudinal, central series of largish, angular, black-brown bars, occupying nearly all the upper side; the first two are often stronger than the rest, and almost confluent, forming a large, irregular patch. The sides, the part just above the spinners, and the underside, are black-brown.

The female is rather larger and darker than the male. All the angular bars along the middle of the upper side of the abdomen are more or less confluent, and the sides have a broken line of indistinct, yellowish-brown markings along their lower part.

A single example of each sex, found among heather, at Bloxworth, in May, 1862, remained until recently, the only known specimens.

I have since met with several examples of both sexes (at the end of September, 1878), among rushes and sedge, in a swamp, near Bloxworth.

LINYPHIA SOCIALIS.

LINYPHIA SOCIALIS, *Sund., Blackw.*, Spid. Great Brit. and Irel., p. 222, pl. xvi., fig. 747.

The male measures about 1-7th of an inch in length.

The caput of the male is rather elevated and prominent before. The cephalo-thorax is yellow-brown, with black margins, and a central, narrow, longitudinal, black bar bifid at its fore extremity. The sides also are marked with short converging, somewhat elongate, triangular black spots, indicating the normal converging grooves.

The falces are long, divergent at their extremities, and have a few strong spine-like bristles in front.

The legs are long, slender, of a pale yellowish colour, annulated with brownish-black. Their relative length is 1.2.4.3. The palpi of the male are yellowish, and of moderate length; the cubital and radial joints are short, the latter is the strongest and very convex on its outer side; the digital joint has a prominent lobe on its outer side, and a deep red-brown, pointed, curved process at its base directed outwards. The palpal organs are complex, with various prominent corneous processes, of which the most conspicuous is a large curved one, with one obtuse end pointed upwards above the base of the digital joint, and the other end projecting prominently outwards and strongly cleft, or of a somewhat bifid form.

The abdomen is of a dull yellowish-green hue on the upper side, thickly speckled with small white spots, and has a longitudinal, central series of angular brown bars, the extremities of which are often considerably expanded; the fore extremity is engirt, rather underneath, with a strong black band, which extends about half way along each side, and has two or more white spots placed in a transverse line at the middle part; from near each hinder extremity of this band an oblique bar or strong line

runs forwards and upwards; and the hinder extremity on each side is followed towards the spinners by two oblique, more or less long and perfect, black stripes.

The female closely resembles the male in colours and markings.

The angular bars on the upper side are so broad, well defined, and near together that the intermediate spaces might be correctly described as greenish yellow-white, angular lines on a brown ground.

This very distinct and pretty spider is not rare on the trunks of Scotch fir trees near Bloxworth, spinning its snare among the rough bark. It is also found in Scotland.

LINYPHIA LUTEOLA.

LINYPHIA LUTEOLA, *Blackw.*, Lond. and Edin. Phil. Mag., 3rd ser., iii., p. 192.

„ ALTICEPS, *Blackw.*, Spid. Great Brit. and Irel. p. 226, pl. xvi., fig. 149.

The length of the male is about 1-6th to 1-7th of an inch. The caput is considerably (but gradually) elevated, and prominent, its fore part being of a somewhat truncated or bluntish-conical form, and its extremity is furnished with many strong, black bristles. The colour of the cephalo-thorax is pale straw yellow, with a black margin, and a rather fine, longitudinal, central line. The legs are long, slender, similar to the cephalo-thorax in colour, and the spines are moderately strong and conspicuous; their relative length is 1.2.4.3. The palpi, of the male, are short, the humeral joint is strong, the cubital and radial joints are about equal in length, and at the fore end of the upper side of the former is a longish, strong, slightly bent spine-like bristle of equal strength throughout, furnished with small projecting points underneath, somewhat bifid at the extremity, and pointing downwards and forwards, from a small tubercular protuberance, almost in a line with the radial joint, which it exceeds in length. The digital joint is of moderate size, and the palpal organs are prominent and complex, with various points and processes, but none of a very conspicuous nature. The abdomen

is of a pale dull yellowish hue, more or less mottled with white; on the fore half of the upper side is a longitudinal, central, brown, or at times black-brown, bar generally somewhat dentated. On either side of this bar, towards its hinder part, and converging together above the spinners, are two rows of black spots, varying in size and shape in different examples, and representing the usual angular lines or bars, all the central or angular portions of which are obsolete in this species, excepting occasionally the last two or three. The sides are marked with some black lines and bars, generally a longitudinal horizontal one, and several other oblique ones; these lateral markings are often more or less obsolete, and sometimes run into each other. In some examples the abdominal markings are almost obliterated; the under side is blackish-brown, often marked with two longitudinal, rather converging, lines of white spots.

The female is larger than the male, and its markings are usually more distinct and perfect.

This very distinct spider is found, though rarely, at Bloxworth in late summer and autumn, among rough grass and heather; but is much more abundant in some localities in the North of England; and is also found in Wales. It must not be confounded with its very close ally *Linyphia alticeps*, Sund., which it nearly resembles, being, however, not quite so large, and easily distinguished by the fore extremity of the caput of *L. alticeps*, being drawn out into a distinct, bluntish point between the eyes; the spine-like bristle also on the cubital joint of the male palpus differs. The latter spider has not yet been met with in Dorsetshire.

LINYPHIA CRISTATA.

BATHYPHANTES CRISTATUS, *Menge*, Preuss. Spinn. 121, Tab. 46, pl. 22.

LINYPHIA CRISTATA, *Cambr.*, Linn. Trans. xxx., p. 328.

„ EXPLICATA, *Cambr.*, l.c.

„ DECOLOR, *Cambr.*, l.c., xxvii., p. 437, pl. 56, No. 28.

Subsequent repeated and careful examinations have convinced

me that the spiders referred to in the above synonyms are all of the same species.

The adult male measures from 1-12th to 1-10th of an inch in length.

The cephalo-thorax is yellow, sometimes slightly suffused with blackish towards the margins; the ocular region is prominent but not elevated, and the profile below the eyes (*i.e.*, of the clypeus) is very hollow, owing to the prominence of the ocular region and of the lower margin of the clypeus; the legs are long, slender, and yellow; the spines distinct, but not very conspicuous; the falces rather long, divergent, but not very strong; the palpi are similar in colour to the legs; the radial and cubital joints are short, the latter has a not very long, nor strong, black bristle at the fore-extremity of the upper side, and the former is the larger, considerably dilated above at its fore-extremity, and furnished on the upper side with numerous black bristles and hairs. The digital joint is of moderate size, with a lobe on its outer side, and a small, somewhat conical, prominence at its base on the inner side. The palpal organs are prominent and complex; but though characteristic in their structure they do not present any very conspicuously distinctive processes. The abdomen is oviform, and considerably convex above; its colour is dull yellowish, tinged with brown, and sparingly spotted with small white spots; along the middle of the upper side is a series of blackish, transverse, angular lines or bars, the first one or two being incomplete at the apex, and some of them at times having the extremities dilated into an irregular blotch; the sides are blackish, with two oval, or elongate, yellowish-white markings in a horizontal line; the posterior of these markings, on each side, unite over the abdomen above the spinners; the under side is strongly suffused with brownish-black. This description of the abdomen is most uniformly applicable to the female, as the male has the abdominal markings usually more or less obsolete; in other respects the sexes are remarkably similar; the abdomen of the female, however, being much more convex above, and the genital process characteristic.

This spider is nearly allied to *Linyphia tenebricola*, Wid., from which it may easily be distinguished by its stouter form and generally yellower colouring; it is also allied to *Linyphia alacris*, Bl., from which the absence of the central longitudinal dentated band on the abdomen, as well as the hollow profile line of the clypeus, at once distinguish it. It is rather a rare spider among moss, grass, and other low herbage in open places in woods at Bloxworth in the months of April and May. I have also received it from Berwickshire.

LINYPHIA PULLATA.

LINYPHIA PULLATA, *Cambr.*, Zool. 1863, p. 8580, and Linn. Trans. xxviii., p. 446, pl. xxxiv., fig. 12.

The length of the male is 1-10th of an inch.

The cephalo-thorax is of a yellow-brown colour, considerably suffused on the sides and margins with blackish. The caput is neither elevated nor prominent in front. The legs are long, slender, and bright yellow; relative length, 1.2.4.3., not 1.4.2.3., as l. c. Spines moderately strong. The palpi are short; the radial and cubital joints short, the former the stronger, and furnished with some longish, curved, bristly hairs in front, and the latter has a strongish, tapering bristle at its fore extremity. The digital joint is large, and of a somewhat elongate-oval form, with a lobe on its outer side. The palpal organs are tolerably compact, and not very complex. The ordinary curved process at their base, on the outer side, is not very prominent nor conspicuous, though its form is characteristic; and there are two or three corneous, spine-like processes, near their extremity, one of them being of a rather hooked form, and the others also rather bent, but neither of them very prominent nor conspicuous. The falces are long, rather attenuate at their extremities, which are considerably divergent. The abdomen is of a dark, dull, suffused, yellowish-brown colour on the upper side, with a longitudinal central series of obscure black angular bars, of which the extremities are often dilated; the sides and under side are

brownish-black. In some examples the angular bars are stronger and better defined, and the pattern is then most conspicuous, as a yellow-brown one, on a black ground. The original examples on which the species was founded were of this kind.

The sexes resemble each other very nearly in colours and markings, but the abdomen of the female is exceedingly convex above, and in some examples is entirely black, with some dull brownish-yellow markings along the middle of the upper side.

Found in spring on iron railings, and throughout the summer among heather, at Bloxworth, but not in any abundance. It is nearly allied to *Linyphia flacipes*, Blackw.

LINYPHIA NIGRINA.

LINYPHIA NIGRINA, *Westr.*, *Aran. Succ.*, p. 132.

„ *PULLA*, *Blackw.*, *Spid. Great Brit. and Irel.*, p. 234. pl. xvi., fig. 156.

Length of the male about 1-8th of an inch.

This spider is very closely allied to *Linyphia pullata*, Cambr., but is larger, and of a darker hue. The abdomen is brown-black, with a central longitudinal dentated pale band on the upper side, and an obscure pale stripe on each side of the fore extremity. In some examples the central band is broken up into a series of somewhat triangular patches, whose vertices are directed forwards; being in fact the intermediate spaces between the ordinary transverse angular black bars, which have here become the ground colour, and are seldom or never conspicuous as a dark pattern on a light ground, as in *Linyphia pullata* and others. The legs are not quite of so clear a yellow as in that species, and the palpal bulb is larger. The palpal organs also differ in structure, and are furnished, at their extremity, with a coiled, black, filiform spine, within the coil of which appears the prominent point of another spine. The digital joint is

rather large, and has a slender curved process at its base on the outer side, and a largish lobe near its extremity on the inner side.

The female is larger and generally more distinctly marked than the male.

Linyphia nigrina is not rare on low plants and herbage, among young underwood, at Bloxworth, and in various other localities in Dorsetshire in the summer and early autumn months. It is also found in other parts of England, as well as in Scotland.

LINYPHIA APPROXIMATA.

LINYPHIA APPROXIMATA, *Cambr.*, Linn. Trans. xxvii., p. 424, pl. 55, No. 19.

Length of the male 1-9th of an inch.

This spider is very closely allied to both the foregoing, but may be distinguished from them without difficulty.

The caput is only very slightly raised above the rest of the cephalo-thorax, which is of a yellowish colour, slightly clouded with dusky, and sometimes marked on the sides with converging, indistinct, sooty lines. The legs are dingy yellow, their relative length is 1.2.4.3., and the spines are few, fine, and semi-erect. The palpi are short, the digital joint large, of irregular form, and (including the palpal organs) as long as the whole of the rest of the palpus. These organs are very prominent and complex, with a short, slender, circularly curved spine at their extremity.

The abdomen is nearly black, with a series of strong, angular markings of a pale whitish colour along the middle of the upper side. The vertices of these markings are sometimes obsolete. The female is larger, but resembles the male in colours and markings.

From *Linyphia nigrina* Westr., the present species may be distinguished by the much larger size of the digital joint and palpal organs. The structure also of these organs differs, as well as the pattern on the abdomen. From *Linyphia pullata* Cambr. it

may be known by its larger size, and by the circularly-curved spine at the end of the palpal organs.

Linyphia approximata occurred in abundance at the end of May, 1863, among grass and sedge in a marshy spot at Bloxworth, but I have never met with it since. It has, however, been sent to me from Franco. It spins an irregular web low down among the stems of the grass and sedge among which it was found.

LINYPHIA DORSALIS.

LINYPHIA DORSALIS, *Wider.*, Zool. Misc. Arachn. Mus. Senck., p. 258 (264), pl. xvii., fig. 12.

„ ANTHRACINA, *Blackw.*, Ann. and Mag. N. H. (2). xi., p. 18.

„ CLAYTONIÆ, *Blackw.*, Spid. Great Brit. and Irel., p. 233, pl. xvi., fig. 155.

The length of the male is about 1-9th to 1-10th of an inch.

The cephalo-thorax is of a dark brown colour tinged with yellow. The caput is neither elevated nor prominent in the ocular region, behind which are some bristly hairs directed forwards. The legs are long, slender, of a yellowish-red colour, and the spines are neither numerous nor conspicuous. The palpi are similar in colour to the legs. The radial and cubital joints are short, the former is the stronger and is produced somewhat in front, where it is furnished with bristly hairs. The digital joint is of moderate size, and has a lobe on the outer side. The palpal organs are prominent and complex, with various spines and processes, of which a curved process at the base, on the outerside, and two contiguous curved spines near the middle, are the most conspicuous. The falces are very slightly divergent, and (in the male only) have a small protuberance near the base in front. The abdomen varies greatly in its depth of colour and in the completeness of its markings. In some examples it is black or nearly so (var. *anthracina*, *Blackw.*), at other times it is black, with a longitudinal series of yellowish-

brown, angular lines down the middle of the upper side; in others it is of a brownish-yellow hue with black angular lines, the latter often entirely obsolete or represented by a few black spots, or by one or two black markings; examples also occur intermediate between the black and the pale ones.

The female is larger than the male; its abdomen is much more convex above, and projects considerably over the base of the cephalo-thorax. A small, rather narrow, elongate process, a little enlarged at its extremity, is directed backwards from the genital aperture.

An abundant species among underwood, on furze bushes, and on the lower branches of oak trees, in the months of May and June, at Bloxworth, as well as in other parts of Dorsetshire. It occurs also in the North of England and in Scotland.

LINYPHIA ERICÆA.

LINYPHIA ERICÆA, *Blackw.*, Spid. Great. Brit. and Irel., p. 237, pl. xvii., fig. 159.

The male measures about 1-13th or 1-14th of an inch in length.

The caput is not elevated, and is only very slightly prominent at the ocular region. The cephalo-thorax is of a pale yellowish colour, slightly tinged with brown; the legs are rather long, slender, of a pale yellow colour, and the spines are of great length, but also light coloured. The palpi are short, slender, and similar in colour to the legs. The radial joint is stronger than the cubital, but both are very short. The digital joint is very small, and of a round-oval form; the palpal organs are complex, the most noticeable process being a not very conspicuous, curved, or crescent-shaped one at their base on the outer side; near the middle of the upper (or posterior) edge of this process is a small, sharp-pointed, thorn-like prominence or spine, whose point is almost in contact with the extremity of the radial joints. The abdomen is of an almost uniform pale yellowish-brown colour, rather darkest underneath. If there

are occasionally a few darker markings above, these soon fade away in spirit of wine.

The ocular area is rather conspicuous, from the eyes being placed on strong black spots, and closely grouped together.

The female is larger, but resembles the male in colour.

Found very rarely among heather at Bloxworth, in late summer and autumn, and occasionally in spring; but received more frequently from the Northumberland and Berwickshire moors, as well as from other parts of Scotland. It has also been met with in North Wales, and in Yorkshire.

LINYPHIA CIRCUMSPECTA.

LINYPHIA CIRCUMSPECTA, *Blackw.*, Spid. Great Brit. and Irel., p. 246, pl. xvii., fig. 165.

The male measures about 1-13th of an inch in length.

The caput is neither elevated, nor prominent at the eyes. The colour of the cephalo-thorax is yellow-brown; the legs and palpi are rather paler, and the spines on the former are not very long nor conspicuous. The radial and cubital joints are short, the former is stronger than the other, the digital joint being of moderate size. The palpal organs are complex, but present no very noticeable process; a slender black spine forms a coil at their extremity, and within the coil appears the short prominent point of another small black spine, or process. The abdomen is of a yellowish-brown colour above, the sides and under side being darker. A longitudinal series of dark-brown, or blackish angular bars, occupies the middle of the upper side; these are sometimes almost obsolete, at other times the darker portions of the upper side prevail, and the central line has then a series of more or less perfect angular bars of a pale yellow-brown colour; in some examples the vertices of these angular bars are wanting, leaving a series of oblique elongate spots in pairs.

The female is rather larger than the male, and its abdomen is very convex above; the pattern also is usually far more distinct on the upper side than in the male.

This spider may be easily distinguished from *Linyphia ericæa*, Bl., by the coiled spine at the extremity of the palpal organs, as well as by the pattern on the upper side of the abdomen. From *Linyphia pullata*, Cambr., which it somewhat resembles in pattern, it may be known by its lighter and yellower hue, as well as by its much smaller size, and smaller and rounder digital joint and palpal organs; these last, although furnished with a coiled, terminal spine, being quite different in other points of structure.

Occasional among heather towards the end of summer, and in autumn, at Bloxworth. I have also received it from various other parts of Dorsetshire, and it occurs in many localities in England, Scotland, and Wales.

LINYPHIA EXPERTA.

LINYPHIA EXPERTA, *Cambr.*, Trans. Linn. Soc. xxvii., p. 429, pl. 55., No. 23.

The length of the male is 1-8th of an inch.

The cephalo-thorax is of a yellow-brown colour, and when looked at sideways there is a hollow in the profile line just behind the caput. The legs are long, slender, furnished with a few short fine spines, and rather paler in colour than the cephalo-thorax. The palpi are of a similar hue to the legs; the radial and cubital joints are of about equal length, the former being slightly prominent behind, and somewhat obtusely produced at its extremity in front. From near the fore extremity of the upper side of both radial and cubital joints there projects from each a single, long, strong, tapering bristle. The digital joint is not very large, and has a lobe about the middle of the outer margin; the palpal organs are prominent and complex; and among the processes connected with them is one situated towards their base on the inner side, projecting, prominently backwards and outwards; this process is of a slender form, nearly straight, semi-transparent, and tipped with a kind of tuft of black bristles,

The abdomen is of an elongate-oval form, projecting a little over the base of the cephalo-thorax, and its colour is dull black.

A single example was found in December, 1867, in the village schoolroom, at Bloxworth, probably brought in among the heathy turf used for fuel. I have since received several examples from Berwickshire; but have not again met with it in Dorsetshire.

LINYPHIA ERRANS.

NERIENE ERRANS, *Blackw.*, Spid. Great Brit. and Irel., p. 253, pl. xviii., fig. 170.

The length of the male is about 1-10th of an inch.

The cephalo-thorax is brown; the caput is not elevated, nor prominent at the eyes. The legs are long and of a pale red-brown colour, and the spines are not strong, though distinct. The radial and cubital joints of the palpi are short, the former much the strongest. The digital joint is oval, with a large lobe on the outer side near the upper part, and the palpal organs are prominent and complex, with several curved, pointed, prominent processes at their extremity.

The abdomen is of a dull, greenish-brown hue, with a longitudinal, central series of obscure, angular, yellowish-brown lines on the upper side.

The female is rather larger than the male, but resembles that sex in colours.

Rare, on iron railings, in spring, at Bloxworth. It appears to be more plentiful in the North of England and in Wales.

LINYPHIA OBLONGA.

LINYPHIA OBLONGA, *Cambr.*, Trans. Linn. Soc. xxvii., p. 433.

The length of the female is 1-16th of an inch.

This minute spider may easily be recognised by its generally

flattened, oblong form; the abdomen also being rather broader behind than in front.

The cephalo-thorax is of a pale, semi-diaphanous, yellowish-brown colour. The legs are rather long, slender, furnished with a few, longish, slender spines, and similar to the cephalo-thorax in colour; the tibiæ and metatarsi often suffused with a darker hue. The eyes are very minute, seated on black spots, and all of a pearly white lustre. The abdomen projects a little over the base of the cephalo-thorax, and is of a dull greenish olive, black-brown colour, marked with some obscure, fine, pale lines and spots, disposed rather regularly, and chiefly visible after the spider has been placed in spirit of wine. The genital aperture is margined with red-brown, and is of a nearly circular form.

I have not yet met with the male of this spider, but females have been occasionally found on iron railings, at Bloxworth Rectory, in the months of May and June.

LINYPHIA (?) INCERTA.

LINYPHIA (?) INCERTA, *Cambr.*, Ann. and Mag. N. H., 1878, p. 117, pl. xi., fig. 2.

Length of female 1 line.

Very nearly allied to *Linyphia oblonga*, *Cambr.*, and closely resembling it, but larger and darker coloured. The eyes are larger and not all pearly white, as in *L. oblonga*, but the fore-centrals are dark; the height of the clypeus exceeds half that of the facial space. Legs long, slender, 4.1.2.3. Spines very long and prominent. Length of spine, near the posterior extremity of the tibiæ of fourth pair, equal to (or exceeding) three times the diameter of the joint. Palpi rather long and slender. Abdomen oblong-oval, depressed, and projecting considerably over the base of cephalo-thorax; it is of a dull brownish-yellow, with a rather darker, tapering stripe on the upper side along the middle of the fore-half. Genital aperture large, and somewhat circular

in form. The integument of the posterior extremity of the abdomen is marked with some transverse foldings.

Found on a wall, in the month of June, 1877, at Bloxworth.

LINYPHIA BICOLOR.

NERIENE BICOLOR, *Blackw.*, Spid. Great Brit. and Irel., p. 250, pl. xvii., fig. 168.

The male measures 1-6th of an inch, though among a series of examples there will be found considerable diversity of size, some larger and some smaller than the measurement given above. This diversity is observable in both sexes.

The caput is very slightly, but not abruptly elevated, rising gradually from the hinder slope of the thorax. It has some bristly hairs on and behind the ocular region. The cephalo-thorax is of a reddish yellow-brown colour, and the legs and palpi are of a rather lighter hue. The spines on the legs are distinct, but not very strong. The palpi of the male are moderately long; the cubital and radial joints short; the former is less strong than the latter, and has a single, long, tapering bristle at the fore extremity on the upper side. The radial joint has a small obtuse protuberance on the outer side of the upper part, furnished with a compact group of long, strong, somewhat spinous, black bristles, of equal strength throughout their length. The digital joint is not large; its form is roundish-oval, with a prominent lobe on its outer side, and a large obtuse process at its base. The palpal organs are prominent and complex; among the most conspicuous of their processes is a curved one near the base on the outer side.

The abdomen projects well over the base of the cephalo-thorax, and is of a brownish-black colour.

The female resembles the male in colours, and is usually larger.

Rare among heather, and herbage in woods, at Bloxworth, but apparently much more numerous in the north of England, Scotland and Wales.

LINYPHIA ABNORMIS.

NERIENE ABNORMIS, *Blackw.*, Spid. Great Brit. and Irel., p. 286,
pl. xix., fig. 200.

The male measures about 1-8th of an inch in length, and the female is somewhat larger.

The caput does not rise above the level of the thorax. The cephalo-thorax is of a brownish-red colour; the legs reddish-brown, armed with a few long fine spines; and the abdomen is of a darkish brown colour, obscurely mottled with a still darker hue.

The digital joint of the palpus has a large lobe on the outer side; the palpal organs are prominent, and very complex, with a very large irregular process at their base on the outer side.

The female resembles the male in colours, but is rather paler, and larger.

Two examples only have been found in Dorsetshire—at Bloxworth, among heather, in summer time. Mr. Blackwall has also found it in Lancashire.

LINYPHIA LINGUATA.

LINYPHIA LINGUATA, *Cambr.*, Trans. Linn. Soc. xxviii., p. 537, pl. xli., fig. 8.

The length of the female is very nearly 1-6th of an inch.

The whole of the fore part (including the cephalo-thorax, palpi, and legs) is of an orange-yellow colour. The abdomen is pale yellow-brown, with a rather indistinct, darker, longitudinal stripe along the middle of the fore half of the upper side, followed towards the spinners by several transverse angular stripes of a similar nature and colour; the sides are slightly suffused with a dusky hue, and the under side has a

broad, longitudinal, dusky band reaching from near the spinners to the genital aperture. With this last is connected a long, rather broad process, directed horizontally backward, and of a somewhat tongue-shape, its extremity being broader than the rest. By the form of this process the female of this spider may be easily determined; but the *male has not yet been discovered. The spines on the legs are rather long, and very slender.

An example of the female was received from Mr. C. W. Dale, by whom it was found at Glanvilles Wootton, in the summer of 1877. It had previously been found only in Scotland.

LINYPHIA DECIPIENS, sp., n.

Adult female length, 2 lines.

The cephalo-thorax is moderately convex above, the profile line of the caput and thorax forming a very slightly curved, even line, being, in fact, almost straight from close to the hinder extremity to the occiput; its colour is a pale, dull, straw-yellow, which would probably have deepened to yellow-brown, as the examples met with had evidently not long attained maturity.

The *eyes* are of tolerable size, in the usual general position, and the ocular area is a little prominent. Those of the hind central pair are rather nearer to each other than each is to the hind lateral eye on its side. The eyes of the hinder row (in the two examples found) have a diaphanous, aborted appearance; whether this may be accidental or not is uncertain; those of the fore-central pair are separated by a distinct interval, equal to

* An adult male example, which I believe to be of this species, has very recently been sent to me from Scotland. Its length is 2 lines. The abdomen is of a dull, sooty hue, without markings, excepting an indistinct, dull, whitish patch towards the hinder extremity of the upper side. The *falces* are rather long, moderately strong, divergent, armed with longish, strong teeth in the usual position, and with a strongish, toothlike process, towards the fore extremity, rather on the inner side. The legs of the second pair are distinctly shorter than those of the fourth pair, while in the female those of the second appear slightly to exceed the fourth pair in length; the legs are clothed with coarse hairs, and two or three very slender spines on the genual and tibial joints. The palpi are rather long, slender, and much like those of *Neriene rufa*, p. 123 (*N. rubripes*, Blackw.), but the palpal organs differ a little in structure, and the *falces* are not nearly so strong, nor so prominent near their base in front.

about half an eye's diameter. The height of the clypeus, which is prominent at its lower margin, exceeds half that of the facial space.

The *legs* are of moderate length and strength, 4.1.2.3. They are similar to the cephalo-thorax in colour, and armed with a few slender erect spines, or spine-like bristles, on the upper sides of the genua and tibiæ. The difference in length between 4 and 1 is very slight.

The *palpi* are moderately long, and similar to the legs in colour and armature.

The *falces* are rather long, powerful, strongly prominent at their base in front, perpendicular, divergent at their extremities, and armed with a double row of 5-2 teeth of different sizes; the two central teeth of the anterior row being the strongest. The colour of the falces is like that of the cephalo-thorax.

Maxillæ moderately long, strong, straight, rather rounded on their outer marginal line, and inclined moderately towards the labium, which is of a somewhat short-oblong form, rounded at the apex.

The *abdomen* is short-oval, of considerable convexity above, and clothed pretty thickly with coarse dark hairs. Its colour is a dull luteous brownish, deepening to sooty black on the sides and under part, with an indistinct, narrow, longitudinal marking on the fore part of the upper side, followed, to the spinners, by a series of indistinct, sooty, transverse, slightly-angular bars. The process in front of the genital aperture is conspicuous, being broad, and rather vertically prominent.

Two examples of this spider (which appears to belong to that group of *Linyphia* comprised in the genus *Bathyphantes*, (Mengo) were found among fallen leaves in Bere Wood, adjoining Bloxworth, towards the end of September, 1878. It is closely allied to *Linyphia linguata*, Cambr., and may possibly be the female of *Nerisne rufa* (p. 123), the adult female of which is as yet unknown to me.

LINYPHIA PARVULA.

LINYPHIA PARVULA, *Westr.*, Aran. Succ., p. 135.

„ LONGIPES, *Camb.*, Trans. Linn. Soc. xxvii., p. 430,
pl. 55, No. 24.

BATHYPHANTES LONGIPES, *Menge*, Prouss. Spinn., p. 116, pl. 21,
Tab. 42.

The male measures 1-12th of an inch in length.

The cephalo-thorax is of a dark brown colour, with dusky black margins, and converging lines on the sides, of the same hue. The caput is a little elevated, and prominent at the eyes, chiefly owing to a dip or hollow, most visible in profile, between the caput and thorax. The legs are very long, slender, of a dark yellow-brown colour, and the spines are neither strong nor numerous, though distinct. The length of the legs of the fourth pair is greater than that of the first. The palpi are not very long; the radial and cubital joints are short, and of equal length; the former is rather gibbous, furnished with a few bristly hairs on its upper side, and slightly produced towards its inner side. The digital joint has a prominent lobe on its outer side forwards. The palpal organs are prominent and complex, the most noticeable of their processes being one of a curved form at their base on the outer side, having its upper edge fringed with bristly hairs; and a slender black spine coils round their extremity.

The abdomen is black.

The female is larger than the male, and her legs are shorter; but the sexes are similar in colour.

I first met with this spider at Southport, Lancashire, in 1859; but afterwards found it in abundance, spinning an irregular web, among stems of grass and rubbish in woods, swamps, and waste places at Bloxworth, in May, 1863. Since then I have scarcely met with it at all. The male is very similar in the structure of its palpi to *Linyphia circumspecta* Bl., but is larger, and never has the

characteristic abdominal pattern of that species. From *Linyphia aëria*, Cambr., it may be distinguished not only by being rather larger, but by the coiled spine at the extremity of the palpal organs, which is wanting in that species.

LINYPHIA AERIA.

LINYPHIA AERIA, *Cambr.*, Ann. and Mag., N.H., 1875, p. 251, pl. viii., fig. 8.

The length of the male is 1-13th of an inch.

The cephalo-thorax, looked at sideways, shows a deep hollow or depression between the caput and thorax, the latter being slightly the most elevated of the two. It is of a yellow-brown colour, with the margins and converging lateral lines of a somewhat more dusky-brown hue. The legs are rather long, and slender; they are of a pale dull yellowish colour, and the spines are few in number, and slender, but rather long.

The palpi are short and slender, and of the same colour as the legs. The cubital and radial joints are very short; the former has a fine, tapering bristle at its fore extremity above; and the latter is the stronger, being produced a little more in front than behind. The digital joint is of moderate size, and the palpal organs are rather complex, but do not present any very noticeable or conspicuous process.

The abdomen is considerably convex above, projects a good deal over the base of the cephalo-thorax, and is of a dull blackish colour.

The female is rather larger than the male, but resembles it in general structure and colour.

This spider is nearly allied to the foregoing, but is smaller; its legs are also shorter, and the palpal organs have no coiled spine at their extremity.

Found occasionally in autumn and spring at Bloxworth Rectory, running on iron railings, on bright, warm mornings.

LINYPHIA PHOLCOMMROIDES, sp. n.

Length of the adult male, scarcely more than 2-3rds of a line.

The cephalo-thorax is of a short, round-oval, rather flattened form; the caput very short, and with scarcely any lateral compression; the thorax, at the top of the posterior slope (which is steep, and greatly indented), is higher than any part of the caput; the profile running through to the eyes in a very slightly concave line. The colour of the cephalo-thorax is yellow, with a dusky-blackish, central, longitudinal line, enlarged into a patch on the occiput. There are also similar converging lines on the sides, and a marginal line of the same hue.

The *eyes* are rather large, and closely grouped, reminding one very much of the position of those of *Pholcomma* (p. 81). Three large eyes, contiguous to each other, form a very short, curved line (or rather a triangle) on each side of the ocular area, which is suffused with black. Between the fore ends of these lines are the more minute fore-central pair of eyes, contiguous to each other, and to the fore-lateral eye on each side; the interval between the eyes of the hind-central pair is very small, being no more, if so much, as half of an eye's diameter. The height of the clypeus is about equal to one-third of that of the facial space.

The *falces* are small, directed strongly backwards, and similar to the cephalo-thorax in colour.

The legs are rather long, and slender; their relative length is apparently 4.1.2.3.; but some of them being mutilated, I am not sure upon this point. The femora are of an orange-yellow colour; the tibiæ of the first and second pairs suffused with dusky-blackish; and the rest are of a paler, yellowish hue. The armature was much damaged, but it consists apparently of hairs and a few fine spines on the tibiæ and metatarsi.

The palpi are short, and yellow. The cubital and radial joints are very short; the latter strongest, and slightly produced at its upper extremity in front. The digital joint is oval, and of moderate size. The palpal organs are very prominent and com-

plex, with various processes, among which the most conspicuous is a large, projecting, curved one at their base on the outer side.

The sternum is large, and heart-shaped; its fore extremity strongly concave or circularly indented; and it is of a yellowish colour, suffused with dusky-black.

The abdomen is small, of a somewhat elongate-oval form, and of a blackish hue, tinged with olive green, and thinly clothed with hairs.

An example of this spider, which may be readily distinguished from many other small species of *Linyphia* by the close grouping of the eyes, and the dark femora of the first and second pairs of legs, was found near Sherborne, in the autumn of 1878, by my nephew, Frederick P. Cambridge.

LINYPHIA INCONSPICUA.

LINYPHIA INCONSPICUA, *Cambr.*, Trans. Linn. Soc. xxvii., p. 432.

The length of the male is 1-17th of an inch.

The cephalo-thorax (which has a narrow blackish margin), together with the legs and palpi and other fore parts, are pale yellow, the sternum slightly suffused with blackish. The abdomen, which projects a little over the base of the cephalo-thorax, is of a pale, whitish-brown colour on the upper side, reticulated with a darker hue, forming an indistinct, central, longitudinal, pale, narrow, denticulate band, pointed at its hinder part, reaching nearly to the spinners, and sending out pale lateral lines. The underside is suffused with black, and the spiracular plates are pale yellow. The eyes are rather large and closely grouped, seated on black (almost confluent) spots, and the interval between those of the hind-central pair is distinctly greater than that between each and the lateral eye, of the same row, next to it. The legs are long and slender, and the spines are long and slender also. The palpi are short; the radial joint is much stronger than the cubital, and, like that of most of this genus, dilated at its anterior extremity, and furnished with a few longish, bristly hairs, of which one is longer and stronger than

the rest. The digital joint is of moderate size, with a small lobe on its outer side. The palpal organs are rather complex, with a curved process, near their base on the outer side, having a short, fine, spiny, black point almost touching the outer extremity of the radial joint.

The female is larger and darker coloured than the male, and her abdomen projects greatly over the cephalo-thorax; her legs also differ in their relative length, those of the fourth pair being apparently longer than those of the second.

This spider is very closely allied to *Linyphia ericæa*, Bl., but may be distinguished by the interval between the hind-central pair of eyes being very distinctly greater than that between each and the lateral next to it, whereas in *Linyphia ericæa* the intervals between the eyes of that row are equal, or, if anything, very slightly greater between the hind-centrals. The genital process of the female also differs in structure. The palpal organs of the male are very similar in both species.

An adult male and females were found among herbage in a wood at Bloxworth, in April, 1867, but it has not been met with since.

LINYPHIA OBLIVIA

LINYPHIA OBLIVIA, *Cambr.*, Trans. Linn. Soc. xxviii., p. 446, pl. xxxiv., fig. 13.

The length of the male is 1-16th of an inch.

The caput is slightly lower (when looked at in profile) than the thorax, and is a very little prominent at the eyes. The cephalo-thorax is yellow-brown, margined with black-brown; at the hinder part of the caput is a largish, somewhat quadrato, black-brown patch, with some lateral converging lines of the same hue.

The eyes do not differ much in size; those of the hind-central pair are very slightly further apart than each is from the lateral next to it; those of the fore-central pair are the smallest, and have a distinct, though very small, interval between them. The cubital and radial joints of the palpi are

short, but of about equal length; the latter is a little produced at its fore extremity on the upper side, and the former has a single, curved, prominent black bristle issuing from its fore side; the digital joint is of moderate size, and the palpal organs are prominent and rather complex, but present no very remarkable process. The abdomen is shining black. The legs are slender, of moderate length, and of a dull brownish-yellow colour; and the spines are few, long, and erect, but slender.

This spider is nearly allied to *Linyphia ericæa*, Bl., and *Linyphia inconspicua*, Cambr., but, from both, the black abdomen and the colour of the cephalo-thorax distinguish it readily. It also approaches nearly to some species of *Neriëne*, though the presence of distinct spines on the legs separates it from that genus.

A single example only was found at Bloxworth in the summer of 1870, but in what situation I have no precise note; probably it was among herbage in a wood.

LINYPHIA OBLITA.

LINYPHIA OBLITA, Cambr., Trans. Linn. Soc. xxvii., p. 432.

Length of the male, 1-13th of an inch.

The profile line of the thorax and caput has no hollow or depression behind the latter; nor is the latter elevated, nor prominent at the eyes; resembling, in fact, in the form of the cephalo-thorax, many species of *Neriëne*. The cephalo-thorax is of a dark yellowish-brown colour, with a black margin, and an angular dark brown patch at the back of the caput, and some narrow converging lateral stripes of the same hue. The legs and palpi are yellow, the former moderately strong and not very long; their relative length is 4.1.2.3., and they are furnished with a few slender spines of moderate length. The radial joint is stronger than the cubital, and has, on its outer side, some long, curved, bristly hairs directed downwards. The digital joint is of moderate size, and the palpal organs are compact, though com-

plex, with a strong curved process at their base on the outer side.

The eyes are rather small, but do not differ greatly in size; they are seated on small black spots, and those of the posterior row are equidistant from each other; the height of the clypeus (which is not impressed, but is a little prominent below) is half that of the facial space. The falces are a little divergent at their extremity, and are directed strongly backwards towards the sternum, which is of a blackish-brown colour.

The abdomen projects, but very slightly, over the base of the cephalo-thorax, and is of a brownish-black colour.

This is an obscure spider, and allied to *Linyphia oblivia*, Cambr., but may be distinguished by the less abrupt slope of the hinder part of the thorax; in *L. oblivia* the thorax is also perceptibly higher (in profile) than the caput, whereas it is not so in the present spider; the relative distances also between the eyes of the posterior row differ. Nor could I, on close examination, observe any curved process at the base, on the outer side, of the palpal organs of *L. oblivia*.

A single example beaten from a furze bush, at Bloxworth, in the summer of 1863.

LINYPHIA PALLIDA.

LINYPHIA PALLIDA, *Cambr.*, Trans. Linn. Soc. xxvii., p. 435, pl. 56, No. 26.

The length of the male is 1-12th of an inch.

The caput is not elevated, the profile line forming a gradually rising slope to the ocular area, which is a little prominent. The cephalo-thorax is of a dusky yellow hue, tinged with orange, and its surface is minutely punctured with very fine impressed dots. The clypeus is prominent, and its height is half that of the facial space. The eyes are on small black spots, and the interval between those of the hind-central pair is rather greater than that between each and the lateral eye next to it. The legs are long and rather slender; the relative length of those of the

male is 4.1.2.3. ; they are like the cephalo-thorax in colour, and are armed with long spines.

The palpi are short; the radial joint is stronger than the cubital, and is furnished with some bristly hairs, one of them towards the base in front being of a spinous nature, very long, strong, directed forwards and downwards, curved and tapering. There is also a strongish bristle in front of the cubital joint, but its length is not more than half that of the one on the radial; the digital joint is large, and the palpal organs are prominent and complex. The two most conspicuous processes are a long, slightly bent one, on their outer side, with a prominent, sharpish spur behind, near the middle of it, and another strong curved one, on the same side, close to their base; at their extremity is also a small bent, blackish, blunt-pointed, spiny process.

The abdomen is of a light, dull yellowish colour, thinly clothed with coarse hairs; and in one example there were some slightly angular, transverso, dusky lines along the middle of the hinder half.

The female resembles the male in colour, but is larger. The abdomen is greatly convex above, and the falces are more divergent. The genital process is very large, strong, and projects almost at right angles from the aperture, its form is also somewhat complex. The relative length of the legs of this sex also differs from that of the male, being 1.2.4.3.

Two examples (one of each sex) were found at the roots of heather at Bloxworth, in March, 1867.

LINYPHIA DECENS.

LINYPHIA DECENS, *Cambr.*, Trans. Linn. Soc. xxvii., p. 436, pl. 56, No. 27.

The male measures 1-12th of an inch in length.

The caput is not elevated above the thoracic level. The cephalo-thorax is of a yellow-brown colour, and its surface is finely, completely, and thickly covered with minute punctures.

The eyes are very small, and the interval between those of the hind-central pair is no more than half of that between each

and the lateral eye of the same row next to it. The legs are long, moderate in strength, and of a paler, clearer yellow colour than the cephalo-thorax. Their relative length is 4.1.2.3., and the spines are few and slender.

The palpi are short, and like the legs in colour. The radial joint is rather protuberant, or produced, at its extremity in front, where it has a single marginal row of bristly hairs projecting over the base of the digital joint, with two longer and stronger curved bristles on the outer sides. The digital joint is large, and has a large lobe, ending in a blunt projection, towards its base on the outer side. The palpal organs are prominent and complex. A strong, curved process projects outwards at their base, and has a slight notch on its inner margin near the extremity. There are also two curved spines at the extremity of the palpal organs rather on the inner side; one of them lies within the other, and is much the slenderer of the two; near them also is a small, conically-pointed protuberance.

The falces are long, strong, and very slightly divergent. The abdomen projects slightly over the base of the cephalo-thorax, and is of a pale brownish-yellow colour, covered sparingly, but regularly and conspicuously, with blackish-brown hairs.

This spider bears a considerable resemblance to *Linyphia pallida*, Cambr., in general appearance and colours, but may easily be distinguished by the structure of the palpal organs, and by the very small size, and position of the eyes.

A single example only, found at the roots of heather at Bloxworth in the spring of 1862.

LINYPHIA CONCOLOR.

LINYPHIA CONCOLOR, *Wid.*, Mus. Senck., Band 1., p. 267, Taf. 18, fig. 3.

THERIDION FILIPES, *Blackw.*, Spid. Great Brit. and Irel., p. 206, pl. xiv., fig. 136.

The length of the male is 1-10th of an inch.

The caput is on the same level as the thorax, and the ocular

region is very slightly prominent. The colour of the cephalothorax is yellowish-brown; the legs and palpi being a little lighter in hue. The legs are long and very slender (1.4.2.3.); the spines on the legs are fine and short, but distinct and nearly erect. The palpi (excepting the digital joints) are short; the radial is stronger than the cubital joint, being prominent at its fore-extremity and on the inner side, with several long, strong bristles in front. The digital joint is long and of an irregular oval form, drawn out before, and with a prominence towards the base on the outer side, and two smaller ones close to its base in front. The palpal organs are prominent and complex; among the various processes is one which extends beneath them throughout their whole length, and has its fine filiform termination curved in an almost circular form at their extremity. The falcies are long, rather weak, and divergent. The abdomen is of a deep, slightly brownish-black colour.

The female is larger than the male, but resembles it in colours; the abdomen projects considerably over the base of the cephalothorax. The genital process is long, slender, cylindrical, very slightly curved, of a semi-diaphanous, pale, yellow-brown colour, and directed backwards in close proximity to the under surface of the abdomen.

Found, though not abundantly, at Bloxworth and in other localities in Dorsetshire, among moss and under stones and logs in woods during spring and early summer time. It occurs also in other parts of England, as well as in Scotland and North Wales. The palpi of the male (of which the digital joint and palpal organs almost equal in length the whole of the rest of the palpus) and the long, slender, genital process of the female are remarkably characteristic of this spider, and render it an easily distinguished species.

LINYPHIA INSIGNIS.

LINYPHIA INSIGNIS, *Blackw.*, Spid. Great Brit. and Irel., p. 238, pl. xvii., fig. 168.

The length of the male is nearly 1-6th of an inch.

The caput is not raised above the level of the thorax, but the ocular region is a little prominent. The colour of the cephalothorax is yellow-brown. The legs are long (1.2.4.3.), slender, of a paler and clearer colour than the cephalothorax, and usually tinged with red. The spines are tolerably strong, long, and prominent. The palpi are rather short, and similar in colour to the legs. The radial joint is stronger than the cubital, and has a prominent process near its base on the outer side, of a rather sharp pointed, conical form, furnished at its point with two long bristles. The digital joint is large, and has a strong lobe on the outer side. The palpal organs are prominent and complex, with various conspicuous spines and processes, the most noticeable of which is a large, somewhat flattened, curved one beneath their base, and on the outer side.

The eyes of the fore-central pair are separated by an interval nearly equal to half an eye's diameter. The abdomen is of a dull yellowish colour; the upper side has a longitudinal series of transverse, angular, black lines on the middle and hinder part; these lines are often obsolete, or more or less imperfect, and the sides have some short, oblique, black markings forming an irregular longitudinal band; the under side also has some black patches and markings, and there are some broken ones round the base of the spinners. The female resembles the male in colours and markings; the genital process is very long, strong, somewhat cylindrical in its form, enlarging a little towards its extremity, which is notched or cleft, and of a bright reddish colour, the rest being dull yellow; this process is directed backwards, and its inferior surface is furnished with long coarse bristly hairs.

This fine and very distinct species is rare at Bloxworth among low plants in open places in woods and plantations in autumn. It appears to be much more common in the North of England, and has been also met with in Wales and Scotland. The male palpi and the female genital process are exceedingly characteristic, and with the colours and markings of the spider render it an easily recognized spider.

LINYPHIA IMPIGRA.

LINYPHIA IMPIGRA, *Cambr.*, Trans. Linn. Soc., xxvii., p. 422, pl.

55, No. 18.

The male measures 1-6th of an inch in length.

The caput is neither raised nor prominent; the profile of this part and the thoracic region forms a tolerably even curved line; the lower part of the clypeus is rather prominent. The colour of the cephalo-thorax is dark orange-yellow, with some converging, slightly dusky, lateral lines. The legs are long, tolerably strong, and of a clear, bright, orange-yellow colour. The spines are few, short, and semi-erect. The relative length of the legs is 1.4.2.3. The palpi are short, and similar in colour to the legs; the radial joint is a little longer and much stronger than the cubital, and is rather gibbous on the inner side towards the extremity. The digital joint is large, and the palpal organs prominent and complex. A long black spine issues from a corneous process near their extremity, and curves backwards with a large bold sweep round their outer side to the hinder part, or base, near the digital joint. The falces are long, strong, a little prominent near their base in front, and strongly inclined towards the sternum.

The abdomen projects considerably over the base of the cephalo-thorax; it is of a glossy blackish colour, with two dull white spots in a transverse line near the fore extremity, and two bright white ones similarly placed just above the spinners. When in spirits of wine a longitudinal, central, tapering band, and a longitudinal row of largish spots on each side of it, of a darker hue than the rest of the surface, were indistinctly traceable.

Two males are the only examples yet recorded of this fine and distinct species; these were found among sodgy grass in a swamp at Bloxworth in May, 1863.

LINYPHIA CLATHRATA.

LINYPHIA CLATHRATA, *Sund.*, Sv. Spindl. Beskr. in Vet. Akad. Handl., f. 1829, p. 218.

NERIENE MARGINATA, *Bl.*, Spid. Great Brit. and Irel., p. 249, pl. xvii., fig. 167.

The male measures about 1-7th of an inch in length.

The caput is not raised above the thorax, excepting that the profile line rises gradually, in a very slight curve, from the hinder, extremity of the latter, to the eyes. The colour of the cephalothorax is a rich blackish-brown. The legs are long, moderately strong and of a reddish-yellow hue, sometimes annulated with brown. Their relative length is 1.4.2.3. The spines are short and rather slender. The palpi are short, and of a much dusker hue than the legs, the digital joint, which is large, being deep black-brown; the radial is much stronger than the cubital joint, and is furnished with numerous long, bristly, black, prominent hairs on the outer side, the thickest part of the group forming a sort of pointed tuft. The palpal organs are prominent and complex, but tolerably compact, and of a deep brown-black colour; a large curved process originating on their inner side has its sharp point directed downwards on the outer side, and there is a spirally coiled spine at their extremity, with some prominent transparent membrane whose margin is slightly fringed.

The abdomen of the male is of a somewhat narrow, oblong-oval form; it is of a brownish-black colour, with a marginal band of a brown hue, spotted closely with white, strongly dentated along the sides of the abdomen, and continued, but not dentated, above the spinners; at the fore extremity it is divided by the anterior portion of a strong, black, somewhat cruciform marking; and a longitudinal series of curved, angular, dull, brownish bars, spotted with white, occupies the middle of the upper side. According to the preponderance of the black, or white spotted portions, either may be taken as the ground colour of the upper part; in the above description the black

portion is taken as the ground colour; but if the white spotted portion be so taken, the lateral bands then become black dentated ones and the angular lines along the middle also black. The under side is brownish-black with a few marginal white spots.

The female is slightly larger than the male; her abdomen is of the ordinary form and projects well over the base of the cephalo-thorax. In females, young males, and those that have not long attained maturity, the abdominal pattern is generally very distinct; but in old males it is usually merged in a more or less complete blackness, excepting two large white spots, one on either side of the fore extremity.

This is an abundant spider at Bloxworth, and in many other localities in Dorsetshire. It is also found in other parts of England, as well as in Scotland and Wales. It is adult in spring and summer, and its favourite haunts are among herbage, and the débris of former fences in hedge rows; it is also found in various other situations where it can obtain shelter among low growing plants for its horizontal sheet of web, on the under side of which it sits in an inverted position. The male may frequently be seen running on paths and roads in the daytime.

LINYPHIA FURTIVA.

LINYPHIA FURTIVA, *Cambr.*, Trans. Linn. Soc., p. 425, pl. 55, No. 20.

The length of the male is 1-6th of an inch in length.

This spider is nearly allied to the foregoing, but the profile line of the caput and thorax is straight, and ascends gradually to the eyes.

The colour of the cephalo-thorax is dark-brown, tinged with yellowish. The legs are long, moderately strong, and of a yellowish-brown hue, the spines being short and rather fine. The palpi are very like those of *Linyphia clathrata*, *Sund.*, but the bristly hairs on the radial joints are not so numerous, nor grouped in a tuft-like form; the digital joint and palpal organs form a larger mass, though the structure of the latter is some-

what similar. The abdomen also, though somewhat like that of the last-mentioned species, and resembling it in the general hue and pattern, yet differs constantly, in both sexes, in the far less distinct dentated marginal band, and central series of curved bars; the former consists of a row of white blotches of different sizes, and its continuance, by a white line round the hinder extremity of the abdomen, is interrupted by a small black interval. The under side is black, without any white spots. The abdomen of the male is oblong, strongly constricted, or strangled round the middle, but that of the female is more of the usual oval form. The genital process is short, with a large kidney-shaped, transverse aperture at its hinder extremity. This portion of structure is of greater size and prominence than that of *L. clathrata*.

Found on several occasions, in early summer, among heather, growing on the overhanging ledges of gravel pits and banks on Bloxworth Heath, and, in June, 1877, among coarse star grass on the sandhills near the sea at Studland. Its habits and snare resemble those of *L. clathrata*.

LINYPHIA BUCCULENTA.

ARANEUS BUCCULENTUS, *Clerck*, Sv. Spindl. p. 63, pl. 4, Tab. 1.

NERIENE TRILINEATA, *Blackw.*, Spid. Great Brit. and Irel., p. 279, pl. xix., fig. 193.

Length of the male 1-4th to 1-5th of an inch.

The caput is not higher than the thorax, though, when looked at in profile, there is a slight dip or hollow between them. The colour of the cephalo-thorax is yellow-brown, with black margins, and often an indistinct, dusky band above them, and also a central, longitudinal, black-brown band. The legs are long and moderately strong, as nearly as possible like the cephalo-thorax in colour, and usually, but not always, annulated with dark brown; the spines are short, not very strong, but distinct. The palpi are tolerably long, the cubital joint enlarges gradually to its fore extremity, and has a long, black bristle at

its extremity in front; the radial joint is shorter, and smaller, and has a conical prominence underneath, near its extremity, with some long, black bristles on its under and inner sides. The digital joint is of great length, and of an elongate, somewhat irregular, oval form, the outer side of the base having three obtuse prominences; the palpal organs are very prominent and complex, with various conspicuous processes.

The abdomen projects well over the base of the cephalothorax, and is of a yellowish-white colour, frequently suffused with a lively pinkish hue, and reticulated with fine dark lines. The upper side is divided longitudinally by a black-brown band, often somewhat dentated, and emitting fine lateral ramifications; and on each side is a longitudinal row of similarly coloured, and often confluent spots; the two rows converging above the spinners. The sides are marked with several oblique blackish lines, and the under side is brown with some pale spots.

Varieties occur in which the abdomen has scarcely any dark markings, excepting an indistinct, longitudinal, central stripe.

The sexes are very similar in colours and markings, but, as usual, the female is the larger.

An abundant species at Bloxworth, and in many other localities in Dorsetshire, under stones and logs, at the bottom of hedgerows, among thick fern and heather, especially where there is much dead débris of the former years' growth. It is also found in other parts of England and in Scotland. The usually distinct markings, and its size, render this generally an easy spider to distinguish, but in its very young stages it may easily be mistaken for *Linyphia luteola*, Bl.

LINYPHIA MONTANA.

ARANEUS MONTANUS, *Clerck.*, Sv. Spindl., p. 64, pl. 3, Tab. 1.

LINYPHIA MARGINATA, *Blackw.*, Spid. Great Brit. and Irel., p. 213, pl. xv., fig. 140.

The male measures from 1-4th to 1-5th of an inch in length, and is sometimes even a little larger.

The profile line of the caput and thorax is nearly straight. The ocular region is slightly prominent, as also is the lower side of the clypeus. The colour of the cephalo-thorax is yellow-brown, strongly suffused with a darker hue on the upper part of the caput and on the sides, and the sternum is nearly black. The legs are long, rather slender, of a brownish-yellow colour, annulated with blackish-brown; the spines are short, not very strong, but tolerably numerous, and prominent. The palpi are like the legs in colour, excepting the digital joint and palpal organs, which are very dark. The radial and cubital joints are short; the former is much the strongest, and has a rather compact group of numerous long, black bristles on the outer side towards the base in front. The digital joint is large, and the palpal organs are very prominent and complex, with several strong processes, and a spiral spine at their extremity, near which is also some fringed membrano, like that connected with the palpal organs of *Linyphia clathrata*, Sund.

The abdomen is of a yellowish, dull-brown hue, on the upper side, which is enclosed by a border, near the margin, of irregular black spots and markings. The long-oval space enclosed, is truncated by a line of white spots above the spinners, and is more or less speckled with white, with a longitudinal series of black, curved, angular bars, those on the fore part more or less defective, and often altogether wanting. The sides are dull yellow-brown, speckled with white, and marked, mostly forwards, with black. The under side is nearly black, with four white spots forming a large, central, quadrangular figure.

The female is lighter coloured and larger than the male.

This spider is nearly allied to *L. clathrata*, but is larger, and has a less distinct pattern on the abdomen; the legs also are more uniformly annulated; and whereas that species is never, so far as I know, found on bushes, but only among low plants and herbago near the ground, the present is most commonly met with in such situations, where it spins the most perfect snare of its kind; the snare consists of a horizontal sheet of finely textured silken web, upheld by numerous tightly-strained, per-

pendicular lines, fixed to the adjacent leaves and twigs, and similarly braced down by other lines on the under side. There are, besides, numerous irregular lines crossing and recrossing in various directions, chiefly above; and the spider sits in an inverted position beneath the horizontal shoot, awaiting the entanglement of any passing insect in the upper maze of insidious lines. It is a common spider at Bloxworth in thick garden hedges, and shrubberies, and is very partial to fences and bushes of yew, holly, box, or white thorn. It is also found throughout the United Kingdom.

LINYPHIA TRIANGULARIS.

ARANEUS TRIANGULARIS, *Clorck.*, Sv. Spindl. p. 71, pl. 3, Tab. 2.

LINYPHIA MONTANA, *Blackw.*, Spid. Great Brit. and Irel. p. 211, pl. xv., fig. 138.

The length of the male is from 1-4th to 1-5th of an inch.

The profile of the caput and thorax is nearly straight, a slight dip only occurring between them; and the ocular region is a little prominent, as also is the lower part of the clypeus.

The colour of the cephalo-thorax is yellow-brown with a central, longitudinal, narrow, blackish band, furcate at its anterior extremity, and a less dark and distinct one on each side, considerably above, but parallel to, the margin. The legs are long, slender, of a brownish yellow colour, the femora tinged with a greenish hue; the spines are numerous and prominent, but not very long. The palpi are long, but similar in colour to the legs. The radial joint is stronger than the cubital, and both are short; the digital joint is small, and the palpal organs are prominent and complex, with a fine spiral spine at their extremity, surrounded by thin membrane. The falces (of the male) are long and very divergent, their length varies in different individuals, and probably increases with age; in some examples the development is excessive, exceeding the cephalo-thorax in length, and giving the spider a most formidable appearance.

The abdomen (of the female) has, on the upper side, a broad,

longitudinal, dentated, brown band, speckled with white, and the marginal prominences, or denticulations, blackish; on the hinder part of this band are, sometimes, several angular, whitish bars in a longitudinal series; the sides are yellowish-white, with a strong, rather irregular, horizontal, black marking at the fore-extremity, and two slightly oblique, black-brown stripes behind it reaching from the band on the upper side, to the under side, which is of a uniform, brown-black colour. Just above the spinners is a large, black-brown, roundish patch, sometimes semi-circular, and sometimes curvi-angular above, and enclosed by a very distinct, yellowish-white, marginal border which does not, however, encircle its lower side. The sternum is blackish-brown.

The abdomen of the male is of a narrow and somewhat cylindrical form, and its markings are generally indistinct and often imperfect. A clear white and very distinct, transverse, curved bar above the spinners represents the semi-circular border of the black patch on that part of the abdomen of the female.

Although somewhat similar to *Linyphia montana*, Clereh., this spider may be distinguished at once by its paler, clearer colouring, the absence of annuli on the legs, and (the males) by the small digital joint and palpal organs, and the long divergent falces.

Universally distributed throughout the United Kingdom, and generally abundant; attaining the adult state in late summer and autumn. It spins a snare very like that of *L. montana*, but not quite so neat and perfect.

The sexes appear to live very peaceably in the same web; in fact the webs of this species often run one into the other, completely enveloping low bushes and plants, especially furze bushes on heaths, downs, and open commons. These are the snares which form such beautiful and conspicuous objects, when laden with dew drops on a bright autumnal morning. On the previous day scarcely one may have been observable; but a fine night is a busy time with the spinners, and myriads of perfect snares are ready to catch the dew by daybreak.

LINYPHIA PELTATA.

LINYPHIA PELTATA, *Wid.*, Mus. Senck., p. 250, Taf. xvii., fig. 7.

„ RUBEA, *Blackw.*, Spid. Great Brit. and Irel., p. 217,
pl. xv., fig. 143.

The male measures about 1-8th of an inch in length.

The cephalo-thorax is of a yellowish-brown colour; the caput strongly tinged with a darker hue. The ocular region is slightly prominent, but the caput is not raised above the thorax. The legs are long, and slender, and the spines are rather short and fine. The palpi are short, and of the same colour as the legs; the radial joint is stronger than the cubital, and each has a long, strong bristle at the fore-extremity on the upper side. The digital joint is rather small, and the palpal organs are prominent and complex, with various corneous processes.

The falces of the male are moderately long, tolerably strong, and a little divergent.

The abdomen of the female is of the ordinary form, and has on the upper side a broad, dentated, slightly purplish-brown, longitudinal, central, brown band; one of the lateral indentations of this band (a little way behind the middle) is much deeper than the rest, some of which are often almost obsolete; the rest of the upper part, and the sides, are white, with a broad, rather irregular, lateral, longitudinal, brown band; the under side is brown, strongly tinged with yellow a little way in front of the genital aperture, and on each side of the hinder extremity is a short, perpendicular, dark-brown, stoutish streak. The central band on the upper side frequently has a series of white, indistinctly angular, bars along the middle.

The abdomen of the male is of a sub-cylindrical form, and is generally darker than that of the female; but its colours and markings are similar, though the sides are almost covered by the longitudinal, lateral, brown stripe.

This spider is nearly allied to the foregoing, but is much smaller, and the male has not the highly developed falces of that species, nor has the cephalo-thorax any central furcated brown

stripe; though not rare on low bushes, and low growing plants in woods and shubberies, it is by no means so abundant as *L. triangularis*, Clerck. Its snare is like that of the *Linyphia* in general.

Found in tolerable abundance at Bloxworth, and in many other localities in Dorsetshire. It also occurs in other parts of England, as well as in Scotland and Wales. The males may frequently be found running about, on fine early-summer days, on gravel paths, and in porches of houses, and verandahs.

LINYPHIA HORTENSIS.

LINYPHIA HORTENSIS, *Sund.*, Sv. Spindl. Beskr. in. Vet. Akad., Handl., f. 1829," p. 213.

„ PRATENSIS, *Blackw.*, Spid. Great Brit. and Irel., p. 215, pl. xv., fig. 141.

„ ALBICINCTA. *Cambr.*, Zoologist 1863, p. 8577.

The length of the male is about 1-6th of an inch.

The caput rises gradually from the thorax, and the ocular region is a little prominent. The cephalo-thorax is of a rich dark yellow-brown colour, approaching to black on the caput, and the falces and sternum are of the same dark hue. The falces of the males are strong, prominent at their base in front, and covered in front and on their outer sides, with minute tubercular granulations; the legs are long, slender, and of an orange-yellow colour, tinged with brown, and the spines are short and fine. The legs of the female are much shorter and of a less bright colour. The palpi are short and of a darker hue than the legs, the digital joint and palpal organs being almost black; the radial joint is much stronger than the cubital, and has its fore extremity on the upper side somewhat produced, with some long slender bristles on the inner side, the cubital joint also is a little gibbous at its fore extremity, rather on the outer side; the digital joint is of moderate size, and the palpal organs are rather complex and prominent, with a spiral spine enveloped in membrane at their extremity.

The abdomen (of the female) is very glossy, and has on its upper side a broad, strongly dentated, somewhat maroon-brown, longitudinal, central band, broadly bordered with white. The sides are also dark maroon-brown, and each has a horizontal, white, irregular band; the two bands generally unite above the spinners, and usually also merge in that which borders the central brown band on the upper side. The under part is similar to the sides in colour.

The abdomen of the male is of a cylindrical form, and though, in the immature state and for a short time after attaining maturity, it nearly resembles that of the female in colours and markings, it becomes very soon of a uniform, deep, maroon-brown hue, with a bright white spot on each side near the anterior extremity.

Immature males of this species were described (Zool., 1863) under the name *Linyphia albicincta*, Cambr.

Found, but not very abundantly, in early summer, among coarse herbage and low plants in open places in woods at Bloxworth. It appears to be more common in some other parts of England and Wales, and has also been found in Scotland. The abdomen of the female often reflects somewhat metallic tints of violet and purple. It is nearly allied to *Linyphia peltata*, Sund.; but its larger size, darker hue, and the granulose surface of the falces of the male will serve to distinguish it readily. The adult males are not so easily met with as the females, appearing to lead, generally, a solitary and vagabond life.

LINYPHIA PUSILLA.

LINYPHIA PUSILLA, Sund., Sv. Spindl. Beskr. in. Vet. Akad.,
Handl., f. 1829, p. 214.

„ FULIGINEA, Blackw., Spid. Great Brit. and Irel., p. 216,
pl. xv., fig. 142.

The male measures from 1-5th to 1-7th of an inch in length.

In form, general structure and colours this spider nearly resembles *Linyphia hortensis*, Sund.; it is, however, usually smaller;

and the male, whose abdomen, both in form and colours, is strikingly like that of the species last named, may be distinguished with great ease by the structure of the palpal organs. These have a long, filiform, black spine issuing from their extremity on the inner side, and forming, on their outer side, a large, bold, prominent, circular bend, which projects considerably beyond them.

The abdomen of the female is yellowish-white on the upper part and on a portion of the sides, with three longitudinal, more or less irregularly dentated, dark, rich, slightly reddish-brown bands, one along the middle, and another on each side. Those on the side usually unite at their posterior extremities, and are joined there by the central band. There is, however, considerable variety in the perfection, form, and strength of these bands; in some examples they are very strong, and usurp most of the surface; in others they are quite narrow, and broken. The remainder of the sides, and the under part, are of a uniform, deep black-brown hue.

Found at Bloxworth, and in other localities in Dorsetshire, in tolerable abundance, among coarse grass and low plants in meadows, and in open places in woods and plantations, in the early summer time. It occurs also in other parts of England, as well as in North Wales and Scotland. Its snare is similar to that of its congeners.

GENUS *ERO*, *C. L. Koch*. *THERIDION*, *Bl.*, in part.

The remarkable little spider upon which this genus has been founded is included in the genus *Theridion* by Mr. Blackwall. It has certainly some characters in common with *Theridion*; but it has also others, of a striking nature, in common with the representatives of two other genera—one South European (*Ctenophora*, *Bl.*), the other exotic (*Galena*, *C. L. Koch.*)—differing, however, in various respects from them both; it is therefore here included in Koch's genus *Ero*, of which it was, until recently, the only known British representative.

The *cephalo-thorax* is short ; the thorax is considerably higher than the caput, and slopes backwards very abruptly.

The *eyes* are as in *Theridion*—four in a central square, with a pair (the eyes of which are contiguous to each other), at a little distance, on each side of it, so that the eyes of the front row are, as nearly as possible, equi-distant from each other.

The *legs* are moderately strong and spinous ; their relative length is 1.2.4.3. ; those of the first pair are considerably the longest, and, with the second pair, are armed with a longitudinal series of long, strong, prominent, slightly curved spines on the inner sides of the tibiæ, metatarsi and tarsi, the intervals between these long spines being filled up with two or three others, in the same series, but much shorter ; the posterior one the shortest, and the rest gradually increasing in length.

The *maxillæ* are moderately long, not very strong, pointed at the extremity, very strongly inclined to the labium, over which their extremities almost meet.

The *labium* is triangular.

The *abdomen* is of an almost globular form, with two or more tubercular prominences on its upper side, and ornamented with various conspicuous colours and markings.

ERO THORACICA.

THERIDIUM THORACICUM, *Wid.*, Mus. Senck. Bd. 1, p. 218, Taf., xiv., fig. 11.

THERIDION VARIEGATUM, *Blackw.*, Spid. Great Brit. and Irel., p. 203, pl. xiv., fig. 134.

The length of the male is about 1-9th of an inch.

The *cephalo-thorax* is of a pale yellow colour, sometimes tinged with brownish ; it has a distinct marginal border of black, with a short, longitudinal, central black line dilated near the middle into a somewhat cruciform or arrow-headed marking, and divided into two short branches just behind the eyes. Behind each lateral pair of eyes is also a somewhat diamond-shaped, black marking. These markings are less perfect in some examples than in others.

The falces are rather long, and strongly tinged with brown. The sternum yellow, variously marked with a black margin, or with black spots and patches. The legs are similar in colour to the cephalo-thorax, and distinctly annulated with dark yellow-brown. The palpi are moderately long, slender, and like the legs in colour. The radial joint is longer than the cubital, but has no projections or apophyses. The digital joint is of moderate size; its colour is yellow-brown, with a rather long, dark red-brown, curved, pointed, horn-like prominence at its base. The palpal organs are prominent, and complex, and have, among some other conspicuous processes, a filiform spine curved in a nearly circular form round their inner side.

The abdomen is short, and excessively convex above; it projects considerably over the base of the cephalo-thorax, and has two small, roundish, tuberculiform prominences in a transverseline a little in front of the middle of the upper side; the fore side of these tubercles is black, the hinder side yellowish-white. The rest of the abdomen is variegated with black, red, yellow-brown, and white, and its surface is furnished thickly with curved bristles of a spinous nature.

This pretty little spider is not very rare at Bloxworth among coarse grass and the débris of stems, sticks, and leaves in old hedge-rows, plantations, and shrubberies, as well as among heather and furze bushes. It occurs also in other parts of Dorsetshire, as well as of England, generally; and has been met with in Scotland and Wales. It constructs a beautiful little egg-cocoon, of a pear, or miniature balloon shape attached by a slender stalk to dead grass, stems, or bits of stick (sometimes to gate posts, and in the corners of verandahs and porches); its outer covering is a kind of coarse, irregular network of a dark, reddish, yellow-brown colour, enclosing a fine silken bag, in which the eggs, no more than six or eight in number, are loosely contained, *i.e.*, they are not gummed together as is the case with the eggs of some other spiders. I have found *Ero thoracica* in the adult state in early spring and throughout the summer.

ERO TUBERCULATA.

ARANEA TUBERCULATA, De. Geer., Mém. vii., p. 226, pl. 13, fig. 1-9.

ERO ATOMARIA, C. L. Koch., Die Arachn. Bd. xii, p. 106, Taf. 420, fig. 1033.

Length of the female $1\frac{3}{4}$ lines. Male rather smaller.

Closely allied, and very similar, to *Ero thoracica*, C. L. Koch, but larger, and easily distinguished by having *four* sub-angular, tubercular, prominences *of a larger size* on the abdomen; two of them (the largest) are situated one on each side of its highest part, the other two are placed, one on each side of its posterior declivity, not quite half way to the spinners.

Found on Bloxworth Heath in September, 1878; and previously received from Wokingham, where it was found by the Rev. C. W. Penny, of Wellington College. This is its first record as a British spider.





FAMILY EPEIRIDES.

THIS family includes a considerable assemblage of British spiders, mostly of fair size, bright colours, and distinctive pattern. All of them spin snares of a more or less perfect orbicular or wheel-shape, consisting of numerous lines radiating from a centre and crossed by a spiral line at regular intervals from the centre to the circumference; a portion of the spiral line is usually studded with minute globules of a transparent, adhesive substance exuded from the spinners and intended for the better entanglement of insects.

The Epëirides may be characterized, generally speaking, as possessing a cephalo-thorax longer than broad, and strongly compressed, on the lateral margins, at the caput. The legs are usually strong, and armed with spines, and in addition to three terminal tarsal claws there are several other strong spines near the ends of the tarsi, on the under side; these additional spines are pectinated, and used for the purpose of stretching a line by pressure of the leg, just as the terminal claws are used for the same purpose by hauling upon the line; they also assist the spider in traversing the lines of its web. The palpi are ordinarily short, with a large digital joint; the palpal organs consisting of a very complex congeries of spines and processes. This, however, is subject to many exceptions, especially in the genera, *Mela*, *Tetragnatha*, *Zilla*, and others (the latter mostly exotic).

The abdomen is variously formed, cylindrical, oval, and sub-

triangular; the last very convex above and projecting a good deal over the base of the cephalo-thorax. Its colours usually depend on a pigment in the epidermis, and not on a coloured pubescence.

The eyes are sub-equal, not of large size, and are placed in four pairs, often seated on tubercular prominences. Four form a central square, or quadrangular figure, and on each side, usually at some distance, is another pair in an oblique line; when closer together they may be described as forming two transverse rows. Thirty-two species of this family, belonging to seven genera, are at present known as British; of these, twenty-six (representing all the genera) have been found in Dorsetshire, and comprise several of our most abundant and best known indigenous spiders.

GENUS META, *C. L. Koch*. EPEIRA, *Blackw.* in part.

The cephalo-thorax in this genus is considerably longer than broad, and moderately constricted on the lateral margins of the caput.

The eyes are on slight tubercles, in two transverse rows, or four pairs, and the interval between those of the hind-central pair is only a little less than that between each and the hind-lateral next to it. The eyes are, altogether, rather closely grouped; the fore and hind central pairs form very nearly a square, the fore side being slightly the shortest. The maxillæ are strong, rather divergent, enlarged and rounded at their extremities, but not very long, being about double the length of the labium, which is short and rounded at its apex.

The legs are long (1.2.4.3.), moderately strong, and armed with short and not very strong spines.

The palpi of the males are rather short, and the palpal organs not very complex.

The abdomen is only slightly broader in front than behind, being of a rather elongate-oval form, and scarcely perceptibly angular at the shoulders.

META SEGMENTATA.

ARANEUS SEGMENTATUS, *Clerck*, Svensk. Spindl., p. 45, pl. ii., tab. 6.

EPEIRA INCLINATA, *Walck.*, *Blackw.*, Spid. Great Brit. and Irel., p. 354, pl. xxvi., fig. 255.

„ MENGII, *Blackw.*, Ann. and Mag. Nat. Hist. 4, ser. iv., Dec., 1869.

The size of this very common spider varies considerably, the males measuring from $1\frac{1}{2}$ to $3\frac{1}{2}$ lines in length, and the females from $2\frac{1}{2}$ to 5 lines. The profile line of the cephalo-thorax forms a tolerably even and regular curve, and the height of the clypeus is less than half that of the facial space. Its colour is pale yellow-brown; the caput is dark blackish-brown on the upper side, minus an oval patch on each side near the occiput, and bisected longitudinally by a yellowish line. The dark colouring is prolonged backwards, in a narrow band, through the middle of the thorax; the caput of the male being less distinctly marked than that of the female.

The legs are similar in colour to the cephalo-thorax; those of the female (but not of the male) being more or less distinctly annulated with brown. The first and second pairs, especially of the male, are considerably longer than the rest, and the spines on the legs of the latter sex are much stronger than on those of the female.

The palpi of the male are short, the radial joint is a little longer than the cubital, and has a very small apophysis at its extremity in front. The form of the digital joint is very peculiar. It has three portions, a rather elongated, slender, straight, and hairy one on the outer side; above it, towards the front, is another shorter, stouter, shining, straight, and tapering to a blackish point; the third, facing towards the inner side, is the main portion, and is of an irregular, but still somewhat elongate-oval shape. The palpal organs are tolerably prominent but not very complex.

The abdomen has the upper side almost covered by a longitudinal, broad blackish-brown marking; it is much the broadest and roundish on the sides, at its fore extremity; and then it tapers gradually to the spinners, with black, sinuous, or rather curvi-dentated, margins; within this marking is a longitudinal series of white transverse ones connected by a central band of the same hue; it is also otherwise more or less mottled with white. The longitudinal series of white markings just mentioned represents (and in some examples very distinctly) the dagger-shaped pattern traceable, more or less clearly, on the abdomen of most species of this and the next few genera; in some examples, however, it forms a series of decreasing white triangles. On each side of the central tapering marking is a more or less clearly defined, white, longitudinal, roughly dentated band. The sides are brown, mottled with white, and the under side has a broad, longitudinal, central, black-brown band margined distinctly, but not broadly, with yellowish-white; and there are two or three distinct spots of the same colour, in a curved row, close on each side of the base of the spinners.

The above abdominal pattern is exceedingly variable both in the depth of its colouring and in the distinctness of its markings. Some examples are brightly tinted in parts with red-brown, yellow, and greenish. Males are sometimes darker but usually less distinct in their markings than females, and their legs have no dark annulations.

This is perhaps the most common and universally distributed of all British spiders. There are two principal broods of the adult form, one in spring and early summer, the other in late summer and autumn. The former are very small compared to the latter, and usually less richly marked. Mr. Blackwall has described those of the spring brood as a distinct species under the name of **Epëira Mengii*. I have, however, examined, and carefully compared numerous examples of both broods, and have compared, them also with Mr. Blackwall's own types of *Epëira Mengii*, and can find no reliable specific difference whatever.

* Ann. and Mag. N. H. 4 Ser., iv., December, 1869.

The constantly smaller size of the spring and early summer examples (which are elaborated out of the hybernated young of the preceding autumnal brood) is to be accounted for, as it appears to me, by a great lack of food and sun heat, as compared with the amount of both these necessary conditions, enjoyed by the autumnal brood; the latter having had the benefit ever since they were hatched, in May and June, of the abundant insect-life and summer heat of June, July, August, and September.

There is scarcely a conceivable situation, among herbage, bushes, heather, &c., where *Meta segmentata* may not be found abundantly. It is perhaps most plentiful among furze bushes on heaths and commons. Their orbicular snares are invariably extended at an inclination to the plane of the earth. I have never detected one extended perpendicularly. In the centre of the snare is a vacant space where the spider sits with its legs extended forwards and backwards, dropping as if dead on the least disturbance. I have more than once seen one drop in this way, not from fear, but upon an insect which it had espied on the ground a little way below it, ascending again quickly with its prize, by means of the lines drawn from its spinners in the descent.

The webs of this spider are a beautiful object when covered with millions of dewdrops on a bright early-autumn morning. In some seasons the furze bushes on our Dorsetshire heaths are completely covered by the snares of this and another equally abundant spider, *Linyphia triangularis*, Clk. (p. 227).

META MERIANÆ.

META MERIANÆ, *Scopoli*, Ent. Carn. p. 395.

EPEIRA ANTRIADA, *Walck.*, *Blackw.*, Spid. Gt. Brit. and Irel., p. 351, pl. xxvi., fig. 254.

EPEIRA CELATA, *Blackw.*, l.c., p. 353, pl. xxvi., fig. 254.

The length of the male is from 3 to 5 lines, and of the female from 4 to 6½ lines.

This spider is very closely allied to *M. segmentata*, but is both larger and much darker coloured. The general structure and distribution of colours is very similar. The cephalo-thorax is brownish-yellow, with black-brown margins, and traces, more or less complete, of converging lines of the same colour on the sides of the thorax, the caput is also black-brown, prolonged by a band of the same hue to the hinder margin of the thorax, and with, generally, two pairs of brownish-yellow spots or blotches behind the eyes. The falcies are of a more or less uniform deep reddish-brown colour; the legs yellowish-brown, spotted and distinctly annulated with black-brown.

The dark central longitudinal abdominal band is less distinctly defined, and the whole of the upper part and sides of the abdomen are spotted and marked with black and white; but a similar pattern to that of *M. segmentata* is usually traceable both above and underneath. In front of the spinners, however, there are often, in the female, two yellowish spots in a transverse line.

A very distinct variety is occasionally found, the abdomen of which is dark blackish-brown mottled with yellowish-white, and has a clearly defined, longitudinal, central, and, more or less immaculate, yellow or yellowish-white band running throughout. This variety has been described by Mr. Blackwall as a distinct species—*Epeira celata*, Bl.—but the structure of the palpi of the male differs in no respect from that of those examples in which the ordinary type of abdominal pattern exists.

The palpi are very similar in their general structure to those of *M. segmentata*, but the middle one of the three portions of the digital joint is much larger, very prominent, and strongly curved; it tapers also, but its extreme point is truncated. There are other differences in the palpal structure, but the one mentioned is the most obvious, and sufficient to distinguish the males of the two species at a glance.

This spider is found in the corners and windows of outhouses, verandahs, and greenhouses; also under overhanging banks and rocks, and other damp dark situations, and its snare resembles that

of *Meta segmentata*. It is not an unfrequent spider at Bloxworth and other localities in Dorsetshire, in such situations as those above noted, and indeed it appears to be generally distributed throughout Great Britain.

GENUS TETRAGNATHA, Latr.

The *cephalo-thorax* is of an oblong-oval form, but wider in the middle than elsewhere, and somewhat truncated at both ends. The lateral marginal constrictions at the caput are slight, the whole is rather flattened, and the caput is but slightly raised above the thorax.

The *eyes* are small, and in two transverse rows, occupying nearly the whole width of the caput. Four form very nearly a square in the centre, and those of each lateral pair are distinctly, and often widely, separated from each other.

The *legs* are very long, slender, and armed with rather fine spines; their relative length is 1.4.2.3, those of the first pair being considerably the longest.

The *maxillæ* are long, straight, and greatly enlarged on the outer side at their extremities, giving them the appearance of divergence.

The *labium* is of a somewhat semicircular or quadrate form, rounded at the apex, but broadest at the base.

The *falces* are long and very divergent—especially in the males, and diversely armed with a very long fang, numerous teeth and other denticular processes.

The *palpi* of the male have the digital joint split (as it were) into two elongate portions; the palpal organs are very simple, consisting of a basal bulb more or less prolonged at the anterior extremity, which often has one or more fine spines.

The *abdomen* is of a narrow, elongate or cylindrical form.

One species only is yet known in Britain, and that is an abundant and generally distributed one in Dorsetshire.

TETRAGNATHIA EXTENSA.

TETRAGNATHIA EXTENSA, *Linn., Blackw., Spid. Gt. Brit. and Irel.* p. 367, pl. xxviii., fig. 262.

This spider is very variable in size. The male measures from 2 to 4 lines in length, and the female from 4 to 5½ lines.

The cephalo-thorax is of a yellowish-brown colour, immature examples having frequently, and some adults occasionally, a central longitudinal dark band, broad behind the eyes and narrowing to the hinder extremity, with a dark band also on the lateral margins. The two rows of eyes are nearly parallel, and the intervals between those of each row do not differ greatly. The legs are of a clearer and lighter colour than the cephalo-thorax, but in immature examples they are frequently annulated with dusky blackish brown; the length of the first and fourth pairs is excessive in the males. The palpi are rather long and slender; the radial joint is considerably longer than the cubital, both being of a clavate form; of the two parts into which the digital joint is divided, the upper one is much the smallest, and has a rather strong, obtusely pointed prominence on its inner side; the palpal organs are simple, but have two curved spines at their extremity. The *fulcres* are strongly porrected, and widely divergent; in the males their length equals that of the cephalo-thorax. Of the teeth on their inner sides, one near the middle is by far the longest and strongest; and near their fore extremity on the outer side is a strong, slightly curved, tooth-like process, with generally a small prominence near its rather bent termination, giving it a somewhat bifid appearance; in some examples the bifid termination is very distinctly forked or Y-shaped; this process is wanting in the female.

The narrow, elongated, cylindrical *abdomen* (which, however, in some dark-coloured examples is considerably elevated or humped towards the fore part on the upper side, especially in females) varies greatly in the depth of its colours, and in the distinctness of its markings; its hues are greenish, brown, red-brown, silvery yellowish, white and black; the upper side often has a

tolerably distinct, broad, longitudinal, brownish green, or brownish yellow band, whose margins are somewhat dentated, and darker than the rest, with occasionally a brown or black marking here and there; along the middle of this band runs a pale, brown narrow stripe, emitting a strong, oblique, lateral one on each side near its fore extremity, and various finer and much shorter ones between that and the under part of the abdomen. On each side of the central band is another broadish one of a silvery yellow; below this on each side is a brown band, then a silvery longitudinal stripe, forming a lateral margin to the under side, which is of a brown hue.

The male is less distinctly marked than the female, and usually paler coloured.

Although so variable in colours, this species cannot be mistaken for any other known British spider, there being, as yet known, nothing like it to be found spinning an orbicular snaro.

Its favourite haunts are ditches, brooks, and other damp places, overgrown with bushes and rank herbage, among which it constructs its web. This is of slender texture, and has a void place in the centre; its usual position when at rest is with the first and second pairs of legs stretched out forwards in a straight line, the third pair often at right angles to the body, and the fourth pair in straight line backwards. This position, probably, gave rise to its specific name, *extensa*—"stretched out."

It may be found in the adult state throughout the summer, from the months of May and June, and it is an abundant spider throughout Great Britain.

GENUS CYCLOSA, *Menqe.* CYRTOPHORA, *Sim., Cambr.;*
and EPEIRA, *Blackw.,* in part.

The spiders of this genus may be easily distinguished by the form of the hinder part of the abdomen; this is always more or less elongated, sometimes into one, at other times into two or more prominences, which frequently have a somewhat tuberculiform appearance.

The form of the thorax is round-oval, the caput is rather elongated, slightly prominent at the eyes, and the lateral marginal constrictions are strong.

The eyes of the two central pairs form a small quadrate figure rather longer than broad, and those of each lateral pair are contiguous to each other, and not very far removed from the central four.

The *legs* are neither very long nor strong; the difference in their length is not great, and the spines are very slender.

The *palpi* are short, the digital joint and palpal organs of very large size, and the latter very complex.

The *maxillæ* are short, strong, bent strongly downwards, and towards the labium, which is short and somewhat pointed at the apex.

The *abdomen* is produced behind into one or more somewhat tuberculiform protuberances.

One species only of this genus is at present known in Britain; it is found, but not abundantly, in various wooded parts of Dorsetshire, as well as in other parts of Great Britain.

CYCLOSA CONICA.

ARANEA CONICA, *Pallas.*, Spicil. Zool. I., 9, p. 48, Tab. I., fig. 16.

CYRTOPHORA CONICA, *Cambr.*, Trans. Linn. Soc. xxx., p. 329.

EPEIRA CONICA, *Blackw.*, Spid. Great Brit. and Irel., p. 362, pl. xxvii., fig. 261.

CYCLOSA CONICA, *Menge.*, Preuss. Spinn. I., p. 74, pl. xii., tab. 18;
Simon, Arachn. de France, tom 1, p. 38.

The length of the male is 1-5th of an inch, and of the female 1-4th.

The colour of the cephalo-thorax is a dark blackish-brown, very thinly covered with grey hairs. The legs are brownish-yellow, annulated with dark-brown; the anterior portion of those of the first and second pairs being black-brown; and their relative length is 1.4.2.3. The palpi of the male are very short, the palpal organs enormously developed and complex, with a

strong, but short, and rather hook-tipped process near their extremity on the outer side. The sternum is black-brown. The abdomen (of the female) is large and projects strongly over the base of the cephalo-thorax ; at its hinder extremity on the upper side is a strong, sub-conical protuberance, which, although of no great length (though it varies a little in different examples) gives the spider (especially when seen sideways) a very peculiar appearance (pl. iv., fig. 6a). A broad, irregular, somewhat dentated band extends along the middle of the upper side of the abdomen to the end of the protuberance, and is of a dark-brown or blackish colour, greatly interrupted in the middle, and marked variously with white. The sides are yellowish white, marked with dark streaks and markings, and often suffused with a red-brown hue. The under side is black, with four white markings forming a square, towards the fore part. The posterior markings are by far the largest, and each is generally confluent with the smaller one in front of it, forming together a very characteristic angular marking.

The abdomen of the male is smaller and the protuberance is less strong, but in colours and pattern it nearly resembles that of the female.

The snare of *Cyclosa conica* (pl. iv. fig. 6) is exceedingly perfect and beautiful in its closely woven and geometric regularity, and is (I believe always) placed perpendicularly to the plane of the earth among the leaves and smaller branches of shrubs and trees, generally in shady and sheltered positions. It has a habit (noticed in Ann. and Mag. N.H. Ser. 5. Vol. 1878, p. 121) of covering two of the radii near the middle of the snare where it sits, with an adhesive flocculus, designed no doubt to assist in the entanglement of its prey, the remains of which, after having been seized and the juices sucked out, often remain attached to the flocculus, together with small particles of various other substances ; hence the idea of Lister, and others, that this spider purposely attaches the bodies of insects after their capture to these two radii (pl. iv. fig. 6 a.a). The male may generally be found sitting in a snare separate from that of the female, and no doubt

of its own making, which, as M. Simon remarks (*Arachn. de France* tom. 1, p. 37), is unusual among spiders of this family.

This spider is not rare in shrubberies and woods at Bloxworth, and other parts of Dorsetshire, becoming adult in June and July. It is also found in many other parts of Great Britain.

GENUS SINGA, *C. L. Koch*. EPEIRA, *Blackw.* in part.

In this genus the thorax is oval, and the caput is rather long and more regularly convex than in *Cyclosa*; the lateral marginal constrictions are moderate. The legs are moderately strong, but not very long, their relative length varies, 1.2.4.3. or 1.4.2.3., and their spines are rather weak.

The maxillæ and labium do not differ greatly from those of *Cyclosa*, but the abdomen differs materially, being of a rather depressed oval form, equal in breadth, roundness, and convexity at both extremities; the hinder part projects beyond and over the spinners, but has no protuberance like that of *Cyclosa*. Six impressed spots in a longitudinal series of three pairs, are always visible on the middle of the upper side. The eyes are very similar in position to those of *Cyclosa*.

The spiders of this genus are small, but all prettily, and often vividly, coloured. They are found upon low plants, such as heather and rushes, among which their orbicular snares are spun; a small tubular silken retreat, in which they lie concealed, being found close at hand.

Four species are at present known to be British, and all of them have been found in Dorsetshire.

SINGA HAMATA.

ARANEUS HAMATUS, *Clerck.*, Sv., Spindl., p. 51, pl. iii., tab. 4.

SINGA HAMATA, *Cambr.*, Trans. Linn. Soc. xxx., p. 329.

EPEIRA TUBULOSA, *Blackw.*, Spid. Great Brit. and Irel., p. 364, pl. xxvii., fig. 262.

The male is about 2 lines in length, and the female is rather larger.

The cephalo-thorax is of a deep black-brown colour; the falcæ, maxillæ, and labium tinged with red. The legs are

brownish-yellow, with rather indistinct reddish-brown annulations at the joints. The palpi (of the male) are short; the cubital and radial joints are very short, and have some long, strong, curved bristles in front. The digital joint is large and of a dark-brown colour; the palpal organs are very prominent, and complex. The abdomen is rather oblong-oval, and projects considerably over the base of the cephalo-thorax. The upper part is of a deep, rich, black-brown colour, margined with yellowish-white; the central portion is much paler, and often of a reddish hue; a yellowish-white tapering stripe runs through the upper side from end to end, and emits several finer lateral branches; in some examples these white branch stripes prevail on the middle portion, which then assumes the appearance of a large whitish area with some transverse, reddish-brown bars or lines. The sides are yellowish-white, with brown markings, among which are several oblique brown streaks; and the under side is black-brown, with narrow, yellowish, lateral margins.

The abdomen of the male is less brightly and distinctly marked than that of the female. The eyes of the hind-central pair are nearer together than those of the fore-central, being in fact almost contiguous to each other.

Found, though rarely, at Bloxworth and in the neighbourhood, among rushes, in damp and marshy places on heaths and commons, in the months of May, June, and July. I have also received it from other parts of England, and have met with it near Lyndhurst, Hants; but it appears to be very local, and nowhere abundant.

SINGA PYGMÆA.

THERIDIUM PYGMEUM, *Sund.*, Sv. Spindl., Beskr. in Vet-Akad., Handl., f. 1879, p. 121 (in part).

EPEIRA HERII, *Blackw.*, Spid. Great Brit. and Irel. pl. xxvii. fig. 264 (exclude description at p. 366).

EPEIRA ANTHRACINA, *Blackw.*, l. c., p. 357, pl. xxvi., fig. 257.

The length of the male is from 1-10th to 1-8th of an inch, and the female is rather larger.

This spider is smaller than *Singa hamata*, Clk., and though resembling it in general form and structure, may be easily distinguished by the very different colours and pattern of the abdomen.

The cephalo-thorax is deep brown. The legs are short and of a bright reddish or orange-yellow colour in the female, without any markings. The abdomen is shorter, and more convex above than that of *Singa hamata*; it is of a deep, slightly brownish-black colour, and has three longitudinal, yellow, reddish-yellow, or yellowish-white stripes on the upper side; the central stripe usually tapers to the spinners, the other two (which divide the sides from the upper part) are narrower, but of a more uniform width; the under side has also two narrow, longitudinal, marginal stripes of the same colour. There is some variation in the strength and continuity of these stripes, some of them being almost obsolete in some examples, most commonly in the adult males. The *Epëira anthracina* of Blackwall is a variety in which no trace of markings exists on the abdomen.

The spines on the tibiæ of the first pair of legs of the male are long but slender; and the fore-extremities of the femora of the first pair are often darkish-brown. The palpi are short; the cubital joint has at its rather prominent extremity, on the upper side, two long, strong, curved bristles directed forwards; the digital joint is large, and has a curved process at its base, the point of which is directed outwards. The palpal organs are of large size, prominent and complex, with a curved black spine at their extremity.

This spider is not rare among heather on Bloxworth Heath, and in other similar localities in the neighbourhood, becoming adult in June and July. I have also found it near Lyndhurst, and near Oxford; and have received it from Scotland.

Examples (found by myself) both of this and of the next species were before Mr. Blackwall when he described *Epëira Herii* (l. c. supra); his description, however, appears to have been made from one of the next species—*Singa sanguinea*, C. L. Koch.—while the figures were drawn from specimens of *S. pygmaea* Sund. There is no doubt about this inasmuch as the examples

figured from were furnished to the artist by myself. I was at that time ignorant of the distinction between the two species.

SINGA SANGUINEA.

SINGA SANGUINEA, *C. L. Koch.*, Die Arachn., xi., p. 154, Tab. 393, fig. 950.

EPEIRA HERII, *Blackw.*, Spid. Gt. Brit. and Irel., p. 366 (exclude fig. 264, pl. xxvii.).

The length of the male is very nearly 1-6th of an inch, and the female is somewhat larger.

This spider is very nearly allied to *Singa pygmaea* Sund.; the whole of the dark colouring is, however, of a yellower hue. The ocephalo-thorax is of a reddish yellow-brown colour; the legs yellow, the femora of the first pair of those of the male, and a portion of the same part of the second pair, are of a blackish hue, and the abdomen is of a dark reddish yellow-brown above, and blackish underneath, ornamented with five yellowish white longitudinal stripes of the same nature, and in the same position (three above and two underneath) as those of *S. pygmaea*. In the male a strong, spine-like, tapering bristle issues from the fore extremity, on the upper side, of the genual joints of the first pair of legs. The palpi of the male are short, and each of the cubital and radial joints have, a long, strong, curved bristle in front, directed forwards. The digital joint is large, of a dark brown colour, and has a strong, obtusely-pointed, curved process, directed outwards at its base. The palpal organs are of large size, very prominent and complex, with a strong, slightly curved, pointed process, directed prominently downwards, and rather outwards, on the outer side towards their extremity, where there is also a curved black spine.

Found, but very rarely, among heather on Bloxworth Heath. I have also found it on Lyndhurst Heath, Hampshire, and have received examples from Wokingham, where they were found by

the Rev. C. W. Penny, of Wellington College. It is adult in the months of June and July.

SINGA ALBOVITTATA.

SINGA ALBOVITTATA, *Westr.*, Aran. Suec., p. 59.

EPEIRA CALVA, *Blackw.*, Spid. Great Brit. and Irel., p. 365, pl. xxvii., fig. 263.

The length of the male is 1-8th of an inch, and the female is rather larger.

The cephalo-thorax is of a more or less dark, yellow-brown colour, the caput being the palest, and from a little distance behind the eyes an elongate white patch, or short band, runs backwards. The legs are of moderate length, and of a pale brownish-yellow hue; the fore part of the femora of the first and second pairs of the male are blackish. The palpi of the male are short, the cubital joint has two very long, strong, curved bristles directed forwards, and rather outwards, from its extremity in front; the digital joint has a glossy, curved process at its base directed outwards; and the palpal organs are large, very prominent, and complex. The abdomen is of a short-oval form and projects greatly over the base of the cephalo-thorax, giving the spider a very short and dumpy appearance; the upper side is of a slightly reddish yellow-brown colour, often mottled with whitish, and margined with a somewhat dentated, yellowish or cream white band, slightly interrupted on each side towards the hinder part, where it cuts off the upper side transversely in a truncate fashion; there is also a broader, central, longitudinal, dentated, cream-white band, truncated at its hinder extremity, between which and the marginal border there is sometimes a white spot. The sides are yellow-brown, and the under side is dark, blackish-brown, with a lateral, marginal, yellowish-white border, which is continued round above the spinners and close to their base. The abdomen of the male is darker than that of the female, but the pattern is very similar. A rather characteristic portion of the pattern on the abdomen of the female consists of

four deep red-brown or blackish spots, forming a large quadrangular figure which encloses almost all of the upper side. These spots are placed close to the inner edge of the marginal white border; but upon the *dark* part of the upper side.

This is a rare spider in Dorsetshire, but I have occasionally found it among heather on Bloxworth Heath, in the months of June and July. I have also met with it near Lyndhurst, and it has been sent to me from several parts of Scotland.

GENUS CERCIDIA, *Thorell*. EPEIRA, *Blackw.* in part.

In *Cercidia* the cephalo-thorax is rather longer, less convex above, and narrower behind than that of *Singa*. The eyes are very similar in their position, to those of that genus, excepting that the ocular region is more prominent, the hinder row of eyes more strongly curved, and the anterior one nearly straight. The legs are rather short, tolerably strong, and their relative length is 4.1.2.3. The spines are short and slender. The palpi are very short, the digital joint large, the palpal organs of great size and moderately complex. The abdomen is rather depressed, and of a narrow oval form, slightly pointed in front, and projecting considerably over the base of the cephalo-thorax; its upper integument is glossy and of a stout, leathery, or coriaceous nature.

One species only has been yet described as British, and that one has been found in Dorsetshire, as well as in other parts of England, and in Scotland.

CERCIDIA PROMINENS.

SINGA PROMINENS, *Westr.*, Aran. Succ., p. 63.

EPEIRA BELLA, *Meade.*, *Blackw.*, Spid. Great Brit., p. 343, pl. xxv., fig. 248.

The length of the male is 2 lines, and the female is a little larger.

The cephalo-thorax is of a brownish-red colour, tinged with yellow; the sides have a broad, dark, red-brown, longitudinal band near the lateral margins, and there is a strong furcate

marking, or bifid stripe, of the same colour in the medial line, the prongs of the furcate portion are directed forwards, but terminate before they reach the ocular area. The eyes of the two central pairs form nearly a square, the fore side being rather the shortest; and the anterior row is very much shorter than the posterior. The legs are pale roddish yellow-brown, annulated with brownish-red; the greater part of the femora of the first and second pairs being dark reddish-brown in the males, but paler and redder in the females. The radial and cubital joints of the palpi (the former of which is produced on the outer side) have each of them two, long, curved bristles directed forwards from their extremity in front; the digital joint is large, and has a curved process at its base, the extremity of the process being truncated, notched, and directed outwards. The palpal organs have some strong processes connected with them, one of which terminates in a strong, pointed spine directed prominently outwards.

The abdomen has the upper cuticle of a coriaceous, somewhat punctuose nature, and round the anterior margin of the upper side is a single row of seven strongish spines, issuing from small tubercular prominences, and directed forwards; it is of a reddish yellow-brown colour, mottled with a paler hue, and along the central line of the upper side is a, more or less, well-defined yellowish (sometimes orange-coloured) tapering band; this band has a dusky line down the middle, emitting fine, irregular, lateral branches, and in some examples it is somewhat curvi-dentate on its margins. In some specimens of the female there is, on the hinder half of the upper side, a series of tolerably distinct, transverse, dark, red-brown, slightly sinuous lines, with an obscure spot of the same hue a little way from its termination on each side. The under side is deep red-brown, bordered laterally with a yellowish band.

The males have the abdomen, at times, of a very dark colour, the central band being very clear, and the only marking then visible. The lateral bands on the cephalo-thorax are much less distinct in some examples than in others, being at times almost imperceptible.

This is a rare spider, but it is found occasionally in the months of May, June and July, among low plants and herbage of different kinds, in open places in woods at Bloxworth, and in the neighbourhood. I have received it from Berwickshire, and have found it at Drayton Beauchamp, near Tring, as well as near Oxford. Mr. Meade (of Bradford, Yorkshire) has also met with it at Newton Purcell, Oxfordshire.

GENUS ZILLA, *C. L. Koch*. EPEIRA, *Blackw.* in part.

The cephalo-thorax of *Zilla* does not differ much from that of *Cercidia* in its form, though it is perhaps rather broader behind. The anterior row of eyes is about equal in its curve with the posterior row, and the ocular area is but slightly prominent in front. The legs are tolerably long, not very strong, and their relative length is 1.2.4.3., those of the first pair being considerably the longest, especially in the males. The maxillæ are very short, broadest and rounded at their extremities, and the labium is semi-circular. The palpi of the male vary greatly in length in different species; the digital joint is not generally large, nor the palpal organs very large or complex. The abdomen is of a regular oval form, but somewhat flattish on the upper side, and projects well over the base of the cephalo-thorax.

Two species only have as yet been recorded as British, and both of them are abundant in Dorsetshire. The spiders of this genus form a tubular silken retreat near their orbicular snare.

ZILLA X-NOTATA.

ARANEUS LITERA-X-NOTATUS, *Clerck.*, Sv. Spindl. p. 46, pl. ii., tab. 5.

EPEIRA SIMILIS, *Blackw.*, Spid. Great Brit. and Irel., p. 337, pl. xxv., fig. 244.

This spider varies considerably in size. The male measures from $1\frac{3}{4}$ to $2\frac{1}{2}$ lines, and the female from $3\frac{1}{2}$ to $4\frac{3}{4}$ lines.

The cephalo-thorax is yellowish, strongly margined with black, the greater part of the caput suffused, more or less deeply, with

brownish-black, which is often continued backwards in a tapering band on the thorax. The legs are of the same colour as the cephalo-thorax, slightly marked or spotted with blackish—more distinctly in immature than in adult examples. The palpi of the male are short; the cubital joint has a long, tapering bristle in front, and the radial (which is stronger, but slightly, if at all, longer than the cubital) has some hairs and bristles in front; the digital joint is of moderate size, of a regular, but short, oval form, and the palpal organs are neither very prominent nor particularly complex; at their extremity is a curved black spino. The sternum is blackish-brown, with a central, wedge-shaped, yellow-brown marking, whose point is directed backwards. The abdomen is of a regular oval form, somewhat flattened or depressed on the upper side, where the greater part is occupied by a large leaf-like marking, traced by a sinuous, black, marginal line, and its broadest end in front; on each side of the fore-extremity of the leaf is a largish, black, and, at times, rather diffused patch, the rest of it is sometimes of a uniform silvery white hue, with a central, branching, dusky line; at other times it is (particularly in males) more or less marked and speckled with black, but leaving the middle of the fore part immaculate. The sides and under side are dull silvery, tinged with yellowish, and sometimes marked and speckled slightly with black—the under side has a longitudinal, central, black-brown band, with a yellowish-white marginal stripe on each side resolved into two spots on either side of the base of the spinners.

This spider is a very abundant one in most parts of England, especially in the south, and also in Scotland. Its habitat is in the outdoor angles of buildings, and windows (both inside and out), under coping stones of walls, and in the sheltered corners of wooden palings and other fences, as well as in verandahs and greenhouses. When very young it is nearly black, with a distinctly defined, yellow bifid marking on the fore part of the abdomen. Though common everywhere, I have generally found it most common at Weymouth. It is adult in summer and throughout the early autumnal months.

ZILLA ATRICA.

EUOHARIA ATRICA, *C. L. Koch.*, Die Arachn., Bd. xii., p. 103, tab. 419, fig. 1030, 1031.

EPEIRA CALOPHYLLA, *Blackw.*, Spid. Great Brit. and Irel., p. 338, pl. xxv., fig. 245.

ZILLA CALOPHYLLA, *C. L. Koch.*, l.c., p. 148, tab. 216, fig. 538, 539.

The length of the male varies from 2 to $2\frac{1}{2}$ lines; and of the female from 3 to 4 lines.

This spider is very closely allied to *Zilla X-notata*; some examples of the female being often very difficult to distinguish from females of that species. There are, however, differences of coloration by which the two species may generally be distinguished, while the males are so strikingly dissimilar in the form and structure of the palpi that they may be separated at a glance.

The general appearance and distribution of colours (or pattern) is as nearly as possible like that of *Zilla X-notata*, Clerk, but *Zilla atrica* is usually of a brighter yellow hue on the sides of the abdomen, which are also commonly more or less strongly tinged with red. The two black patches also (one on each side of the fore extremity of the leaf-shaped marking of the abdomen) are in *Zilla atrica* generally of a deep red-brown colour. The palpi of the male, instead of being short, as in *Zilla X-notata*, are very long; the cubital joint is rather long, bent downwards, and of a clavate form; the radial joint is inordinately long, at least double the length of the cubital, slightly bent or curved, and has a very small notched prominence at its extremity on the outer side; it is also furnished with numerous erect bristly hairs on all sides. The digital joint is rather small, of a regular, but short, oval form, and about half the length of the radial joint. The palpal organs are moderately prominent and complex, with a strong bifid process projecting outwards from their base, and a curved black spine at their extremity.

This handsome spider is abundant, in the adult state, in early autumn on furze bushes on Bloxworth Heath, as well as on low shrubs and bushes in plantations, but I have never yet found it in such positions as those given above for *Zilla X-notata*. Mr. Blackwall mentions "buildings and crevices in rocks and walls" among the haunts of *Zilla atrica*. I have never, however, found it in any locality in England in such a position, and I cannot help thinking that Mr. Blackwall may perhaps have occasionally mistaken *Zilla X-notata* for the present spider.

I have received this species from various parts of England and Scotland.

GENUS *EPEIRA*, Walck. *EPEIRA*, Blackw., in part.

The genus *Epeira* comprises a considerable number of orbicular-snare-spinning spiders, in fact by far the greater part of those which are at present known to inhabit Great Britain. They may be distinguished, for the most part, from the genera of the Family *Epeirides*, hitherto characterised, by their longer, stronger legs, the spines on which are also stronger, especially those on the tibiae of the second pair in the males. The three groups of eyes also are, usually, more widely separated from each other, and the abdomen of the more typical species is broader and more convex at the anterior extremity than at the hinder part, being of a somewhat sub-triangular form, and often angularly prominent on each side of the fore part.

The thoracic region is usually round-oval, and the caput generally rather long, broadish, but somewhat depressed in front, and strongly constricted on the lateral margins. The ocular region is prominent, and the clypeus very low. The maxillæ and labium are like those of *Singa*. The palpi of the male are very short, and the palpal organs very prominent and complex.

Twenty-two species have hitherto been recorded in Great Britain, and, of these, sixteen have been found in Dorsetshire, including some of our largest, most abundant and handsomest spiders.

EPEIRA CUCURBITINA.

EPEIRA CUCURBITINA, *Clerck., Blackw., Spid. Great Brit. and Irel., p. 342, pl. xxv., fig. 247.*

The length of the male is about 1-5th of an inch, and the female is rather larger.

This spider cannot well be mistaken for any other British species excepting the next (*Epëira Westringii*, Thor).

The cephalo-thorax is of a pale reddish-brown colour, marked (in the male) with a longitudinal, lateral, dark blackish band along each side. The legs of the female are similar to the cephalo-thorax in colour, and immaculate, while those of the male are annulated with black at the articulations, the extremity of the first, second, and fourth pairs being brightish red. The palpi are very short. The cubital joint is prominent at its extremity in front, where there are two, long, curved bristles, as well as one less strong at the base. The radial joint is stronger than the cubital and very much enlarged and prominent on the outer side; the digital joint is large, and has at its base a curved process, whose extremity, directed outwards, is glossy, and in the form of a knob. The palpal organs are of large size, prominent and complex.

The abdomen is oval and projects considerably over the base of the cephalo-thorax; it is of a clear bright apple-green colour, somewhat varied, or shaded, with white on the upper side, where there is, occasionally, a narrow whitish marginal band and a fairly defined, longitudinal, somewhat dagger-shaped, whitish-bordered marking, whose acute point is directed backwards, and two curved, longitudinal, widely separated rows of small black spots, not exceeding five or six in each row, besides the ordinary four in a quadrangle near the middle. The hinder extremity of the abdomen is marked with a conspicuous bright red spot or blotch. The under part has two indistinct, yellowish red-brown, longitudinal, diffused lines—one on each side; and several white spots in the form of a horse-shoe (the open part of which is in front) encircle the spinners.

This spider is perhaps the prettiest of all our British species, and its bright green abdomen with a red blotch on the hinder extremity, must be familiar to most persons who take notice of the denizens of their flowering shrubs, especially rose bushes; on these it may be seen, near its small geometric web, in spring and throughout the summer. It becomes adult in June and July, and is abundant in all parts of the county of Dorset, and indeed throughout Great Britain. Very young examples are tinged with reddish-brown, but the two rows of black spots on the abdomen are always conspicuous and characteristic.

The snare is often placed horizontally, though not unfrequently in an inclined position also, but never, so far as I am aware, perpendicularly.

EPEIRA WESTRINGII.

EPEIRA WESTRINGII, *Thorell*, *Recensio Critica Araneorum*, p. 106, and *Syn. Europ. Spid.* pp. 22 and 548.

„ „ *Thor.*, *Cambr.*, *Ann. and Mag. N. H.* for Febry. 1878, p. 120.

In size, structure, general appearance and colours this spider very closely resembles *Epèiracucurbitina*, Clerek. The male however may be easily distinguished by the absence of the two blackish, longitudinal, lateral bands on the cephalo-thorax, as well as by the digital joints of the palpi and palpal organs being smaller. The curved process at the base of the digital joint also is less curved and scarcely knob-like at the extremity, which is likewise less dark coloured than in *E. cucurbitina*. There are also some differences of structure in the palpal organs. With regard to the female, there is great difficulty in laying hold of any very tangible distinctions, and hitherto I confess that I have not succeeded in readily distinguishing the sexes of the two species.

This difficulty is increased on the continent of Europe, where

a third, closely allied, species (*Epëira alpica*, L. Koch) is also found.

Dr. Thoroll, in his valuable work on the "Synonyms of European Spiders," p. 549, makes some remarks upon the difficulty of distinguishing the females of these three species.

An adult male, with a female, which I believe to be of this species, were kindly sent to me from Glanvilles Wootton, by Mr. C. W. Dale, at the end of June, 1877. Before that date it had not been noted in Britain, though being so similar to the common *Epëira cucurbitina* it has probably been overlooked, and hence we may expect it to occur oftener in future.

Both this spider and *Epëira cucurbitina* lose most of their beauty, and often all their colour and markings, when preserved, whether in a dry state, or in spirit of wine, or in any other fluid.

EPEIRA ADIANTA.

EPEIRA ADIANTA, *Walck., Blackw.*, Spid. Great Brit. and Irel., p. 348, pl. xxv., fig. 251.

The male measures about $2\frac{1}{2}$ lines in length, and the female about 3. There is, however, some considerable variation in the size of both sexes.

The cephalo-thorax is but slightly constricted on the lateral margins of the caput, which is also narrower at the fore extremity than in many others of this genus, the eyes being consequently more closely grouped, but the lateral pairs are still placed at the outer corners of the fore part of the caput. The ocular region is rather prominent, and the clypeus exceedingly low. The cephalo-thorax is yellow, tinged with brown, and has a narrow, central, longitudinal, black-brown stripe, with a longitudinal band of deep reddish-brown, on each side, a little way above the margin, and running quite through to the lateral pair of eyes.

The legs are similar to the cephalo-thorax in colour, with

sometimes a slight reddish tinge, the extremities of the joints and the upper sides of the femora of the first and second pairs being dark brown. The palpi (of the male) are short, the cubital joint has two very long, strong, projecting bristles at its extremity in front, and the radial joint is greatly produced both on the outer and inner sides; the digital joint is of moderate size, with a strong, curved process at its base, whose point is directed forwards and outwards.

The palpal organs are very prominent, but not very complex, and (like many others of this genus) are directed outwards.

The sternum is black. The abdomen is oval, slightly pointed behind, and projects considerably over the base of the cephalothorax. A longitudinal yellow band, very strongly dentated at the fore part, but slightly so, on the hinder part, and tapering to the spinners, occupies a considerable portion of the upper side; this band has a distinctly defined, dentated, black margin on each side, as well as a less well-defined, longitudinal, central, dusky, yellowish-brown, tapering marking which is often dentated something like the yellow band itself. Outside of this is a broad, yellow-brown (or sometimes red-brown) band, and below this, on the sides, there are alternate, oblique streaks of black, white, and yellow-brown. There is some variety in these streaks, the black ones often running into each other and forming a kind of irregular, longitudinal marking. The under side is black, with two longitudinal, yellowish-white stripes, one on each side, followed by two spots of the same colour on each side of the spinners. A prominent; black, tapering, obtusely-pointed, curved, process directed backwards is connected with the genital aperture.

This beautiful *Epëira* is thinly dispersed over the heaths at Bloxworth, and in the neighbourhood; and I have met with it in abundance at Lulworth, near the seaside. It spins its snare among heather, or rushes, by the sides of paths and roads, and in other waste places; and it is adult in the months of August and September.

EPEIRA DIOIDEA.

EPEIRA DIOIDEA, *Walck.*, Ins. Apt. II., p 55.

EPEIRA ALBIMACULA, *Blackw.*, Spid. Great Brit. and Irel. p. 355,
pl. xxvi., fig. 256.

The length of the male is $1\frac{1}{2}$ lines, and that of the female 2 lines. There is, however, considerable variation in the size of both sexes.

The cephalo-thorax is similar in form to that of *Epëira adianta*; its colour is yellow-brown, the sides of the caput and the lateral margins being suffused with a darker hue.

The legs are long, and moderately strong; they are of a yellowish-brown colour, the femora of the first two pairs being the darkest, and the third and fourth pairs having indistinct brown annuli; in the female all the legs are similarly annulated. The palpi (of the male) are short; the cubital joint has a long, strong, curved, tapering bristle, springing from a prominence in front and directed forwards. The radial joint is obtusely protuberant on the outer side. The digital joint is rather large, and has a small curved process at its base, the obtuse point of which is directed outwards. The sternum is yellow-brown, with indistinct dark margins. The abdomen is oval, broader and considerably higher in front than behind, and with a very small sub-angular prominence on each side of the fore-extremity of the upper part; this, however, is a character of the female only, not of the male.

The upper side is of a warm brown colour, spotted thickly with black and white, the latter generally predominating; on the hinder part is a broad, dark, bluntly dentated band tapering slightly to the spinners, broadly margined with black, and spotted with white and black along the middle. This band has the appearance of having been, as it were, intended to run through to the fore-extremity, as fragments of a black margin are visible in one or two places in continuation of the margins of the band; the foremost of these fragments form a nearly complete, black, transverse line, which, with a strong black,

curved band below the fore margin, encloses a large sub-triangular area, on which the white spots are predominant, and sometimes almost confluent. The above-mentioned band has, on the hinder part, its black margins bordered with a close set row of nearly confluent white spots, almost giving the appearance in many examples, of a continuous line. On the lower part of the sides is a broad, longitudinal, dentated, brownish-black band. The under side is black, with two curved, white, marginal bands, each followed by two white spots near the base of the spinners.

This is an exceedingly pretty little spider; it is not rare on underwood at Bloxworth, in the months of June and July, at which season it attains the adult stato. It has also occurred, though rarely, in two or three other parts of England.

EPEIRA ACALYPHA.

EPEIRA ACALYPHA, *Walek., Blackw., Spid.* Great Brit. and Irel.
p. 341, pl. xxv., fig. 246.

The length of the female seldom reaches 3 lines, and the male is very much smaller—from $1\frac{1}{4}$ to $1\frac{3}{4}$ in length.

The cephalo-thorax is strongly constricted laterally, and rather narrow at the fore part of the caput, thus bringing the three groups of eyes rather more closely together than in most other species of this genus. The eyes of the hind central pair are in a straight line with those of the two lateral pairs. Its colour is pale yellowish, slightly tinged with greenish-brown. The lateral margins are black, and there is a central longitudinal line of the same colour. The *legs* are tolerably long (1.2.4.3.), but not very strong, and are similar in colour to the cephalo-thorax. The extremities of the joints are blackish, and there are a few other spots of the same colour; the upper and under sides of the femora of the first and second pairs being also marked with a dark stripe. The spines are long, particularly on the tibiae.

The abdomen is oval, very convex above, and projects considerably over the cephalo-thorax. Its colour, on the upper

side, is a dull yellowish tinged with greenish-brown, and thickly mottled with yellowish-white. The normal, dentated, longitudinal band is obsolete on the fore part, and on the hinder part its margins are scarcely at all denticulated, while it narrows but very little towards the spinners; its colour is darker than the rest, being in general indistinctly spotted with white, with strong black margins, and a central, broken, black, longitudinal line; the white spots outside this band are nearly confluent and form in general a tolerably regular sub-marginal border to it. The sides are like the upper side in colour, striped obliquely with four, or five, parallel, black stripes. On the fore part of the abdomen, in front of the central band, are a broken central longitudinal line of two or three elongate black spots, and on each side of the fore extremity is another of a curved form. The under side is black, and has a longitudinal yellowish-white marking on either side, followed by a row of similar spots encircling the spinners.

The colours and markings of the male are similar to those of the female. The palpi are short. The cubital joint has a single long, strong, curved bristle in front. The radial joint is produced rather behind on its outer side, and the digital joint is of tolerable size, and has a small prominence at its base. The palpal organs are large, prominent and rather complex, with a strong curved process, indented or bifid at its extremity, directed outwards from their fore part.

This very pretty and distinctly marked little *Epëira* is abundant among heather on Bloxworth Heath, where it spins a very perfect snare. The snares are placed at all angles of inclination, as well as horizontally and perpendicularly. It is adult in June and July.

A very distinct variety of the female was sent to me in the summer of 1877 from Portland by Mr. C. W. Dalo; in this specimen the longitudinal band on the hinder part of the abdomen is entirely jet black, excepting four white spots, forming a square near the middle; and from the anterior end of the band a continuous black bar runs to the fore margin of the

abdomen. This variety is described (in the Annals and Magazine of Nat. History for February of the present year) by an inadvertence, as a *Zilla*.

EPEIRA DIADEMATA.

ARANEUS DIADEMATUS, *Clerck.*, Sv. Spindl. p. 25, pl. i., tab. 4.

EPEIRA DIADEMA, *Blackw.*, Spid. Great Brit. and Irel., p. 358, pl. xxvi., fig. 258.

This is one of our largest spiders, though it varies considerably in size, in both sexes. The male measures from 2½ to 4 lines in length, while the female ranges from 4 to 7 lines.

The thoracic region is broad, and the lateral marginal constrictions at the caput are strong. The three groups of eyes are rather widely separated, and the ocular region is prominent. The cephalo-thorax is of a brownish-yellow colour, thickly clothed with hairs, and has a broad, central, longitudinal, dark-brown band, which tapers to the hinder margin, with a lateral band of the same hue on either side. The legs are strong, and of a yellowish hue, with dark-brown annuli; their relative length is 1.2.4.3.

The palpi (of the male) are short. The cubital joint is prominent at its extremity in front, where there are two long, curved, tapering bristles directed forwards. The radial joint is prominent on the outer side, and has a curved process at its base above, the obtuse point of the process being directed forwards and outwards. The digital joint is rather narrow, and the palpal organs are of very large size, complex, and protuberant, with a strong, pale, obtuse, prominent process on the outer side.

The abdomen varies in its general hue from pale yellow-brown to nearly black; its form is somewhat sub-triangular, being much the broadest in front, where, on the upper part, on each side of the extremity, is a small, sub-angular prominence, which is strongest in the female, and on the outer side of which is a yellowish-white marking. The upper side is almost entirely occupied by a very broad band of a darker hue than the rest, taper-

ing backwards, and obtusely dentated or sinuous on the margins, which are marked by a black, and yellowish-white, contiguous lines. This band is more or less thickly and regularly spotted with round and elongate white or yellowish spots, the greater part, and the largest of which are arranged in the form of a large cross towards the fore-extremity, with two or three short, oblique, lateral lines of white spots, emitted on each side from the longitudinal portion of the cross as it runs backwards towards the spinners; on each side of the central band the abdomen is yellow-brown, spotted with whitish, and the sides are somewhat obliquely marked with dull yellowish-white and darker yellow-brown parallel bands or stripes, sometimes edged with blackish, and obscurely mottled with dull whitish. The under side is yellowish-brown, with a broad, central, longitudinal, dark-brown band, on the fore part of which are two, marginal, curved, yellowish-white stripes, whose hinder extremities are much dilated. A long, rather slender, somewhat sinuously curved, and transversely wrinkled process is directed backwards from the fore margin of the genital aperture.

The above description is from an example whose prevailing tone of colour is yellow-brown; the distribution, however, of colour, and the pattern is similar, whatever be the prevailing hue. In the blacker specimens the cruciform arrangement of spots is all the more distinct by the strong contrast of the colours, those spots being then quite white.

The male is very much smaller than the female, but its colours and pattern are generally similar, though the central band on the cephalo-thorax is narrower, and the spots on the abdomen are less numerous. The inner side of the fore-extremity of the tibiae of the second pair of legs is incrassated, and armed with numerous short, strong, spines, probably intended for defence against enemies—perhaps against the attacks of the female, to whom is attributed (and no doubt sometimes justly) the propensity to devour the male, if she can catch him, when he approaches her at the pairing season. Although I have been in the habit of observing this spider, among others, now for the last twenty.

five years, I have never myself witnessed the exercise of this propensity. The late Mr. Richard Beck is the only observer, with whom I have been personally acquainted, who has assured me of his having witnessed the capture and devouring of the male by the female. I imagine that the male usually manages to escape; perhaps he times his advances so as to make them after his partner has dined, and is consequently in a good humour, and with the edge, at least, of her appetite blunted.

This spider is abundant everywhere, and is the one usually alluded to under the popular name of the "Garden spider." Its snare is, I believe, always perpendicular, and has no void place in the centre; its positions and localities are too numerous and well known to need detail; it is, however, never, so far as I know, found in buildings of any kind. It is adult at the end of the summer and in early autumn, and is found in all parts of Great Britain and Ireland.

When first hatched, and for some little time afterwards, the young are of a dull orange-yellowish colour, with a black patch on the hinder part of the abdomen. The brood live together, certainly until after the first moulting of the skin, spinning numerous lines among the leaves and other objects near at hand; but when, exactly, they separate and first form their orbicular snares, I have not been able to ascertain.

EPEIRA SCALARIS.

EPEIRA SCALARIS, *Walck., Black., Spid.* Great Brit. and Irel., p. 331, pl. xxiv., fig. 240.

This fine and striking-looking spider, is, like the last, rather variable in size. The male measures from 4 to 4½ lines in length and the female from 6 to 8 lines. In the form of the cephalothorax it resembles *Epeira diademata*, Clerck.; the colour of that part is yellow, slightly tinged with brown and with a narrow, longitudinal, central, stripe, and a broader lateral band on each side, of a blackish-brown hue. It is also thinly clothed with hoary hairs.

The three eye-groups are widely separated from each other, the lateral pairs occupying the extreme fore corners of the upper part of the caput, and (like others of this group) the area of the fore-central eyes is prominent.

The legs are rather long, and strong, of a yellowish colour, broadly annulated with dark roddish brown; like *Epeira diademata* the tibiæ of the second pair are incrassated, and armed on the inner-side with very strong, moderately long spines. The palpi (of the male) are very short; the cubital joint is rather prominent in front, where it has also two long, strong, tapering bristles; and the radial point is produced on the outer-side. The digital joint is large but elongated, and has, at its base, a curved blackish process, whose obtuse point is directed outwards and rather forwards; the palpal organs are very prominent, and complex, but tolerably compact.

The abdomen (of the female) is of extremely large size, and projects over the cephalo-thorax so as almost entirely to conceal it when looked at from a very little way behind; it is broader in front than behind, but not so sub-angular in form as that of *Epeira diademata*, nor has it any angular prominences on the fore corners, but is very obtusely pointed at the middle of the fore extremity. The form of the abdomen of the male is a more regular oval, and much less convex above than that of the female, projecting also far less over the cephalo-thorax. Its colour is pale yellow with a broad, central, longitudinal, deep brown-black band on the hinder half of the upper side, slightly and gradually narrowing as it runs backwards; the fore extremity of this band is (like the whole of it) exceedingly clearly defined, and angularly prominent; it is also closely reticulated with yellow. The sides and under part are streaked and mottled with deep brown and yellow-brown; the under side having a very broad, blackish, longitudinal, central band, with two, curved, longitudinal, yellow stripes, whose extremities are enlarged on the inner sides, and thus partially enclose a large quadrate area on the middle of the under part. The process connected with

the genital aperture of the female is rather shorter and stronger than that of *Epeira diademata*. The sternum is black.

This is not a very abundant spider, but I have met with it in various parts of Dorsetshire, and Mr. C. W. Dale has sent it to me from Glanvilles Wootton; it has also been sent to me from other parts of England, and from Scotland. I have usually found it on the outskirts of woods, and under thick hedge rows, where it is a conspicuous object sitting in the middle of its extensive snare, which is spun, at no great distance from the ground, in a vacant space among the branches and herbage.

Dr. Thorell is of opinion that this spider is the variety *pyramidata* of the *Aranea marmorea*, Clerck., the typical form of which closely resembles *Epeira diademata*, but has never yet been found in Britain. I am not yet, however, convinced of the identity of *Epeira scalaris* and *Epeira marmorea*. I have examined numerous examples of both sexes and all ages of *Epeira scalaris* from many parts of England and Scotland, and never saw one differing in the smallest degree from the type above described, and, therefore, not in any way approaching the type of *Epeira marmorea*. Of the last species, however, I have not had the opportunity of examining well authenticated adults. If *Epeira scalaris* should indeed be identical with *Epeira marmorea*, it is an exceedingly remarkable fact that this variety should be the only form found in England and Scotland, while both forms are common in Sweden.

EPEIRA ANGULATA.

EPEIRA ANGULATA, Clerck., *Blackw.*, Spid. Great Brit. and Irel., p. 360, pl. xxvii., fig. 259.

The length of the female is nearly 6 lines, the male being somewhat smaller.

This spider may be known at once by the large conical protuberance at each fore corner of the upper side of its somewhat sub-angularly-shaped abdomen; these protuberances give it a distinctly triangular appearance.

The colour of the cephalo-thorax, which is thickly clothed

with yellow-grey hairs, is brown, with a longitudinal, central, and two (one on each side) lateral bands of a darker hue. The central group of eyes is placed on a prominence forming nearly a square, whose posterior side is distinctly shorter than the anterior. The legs are strong, of a pale yellow-brown colour, annulated with dark brown, and clothed with greyish hairs; the spines are neither very long, nor very strong; the relative length of the legs is 1.2.4.3. The sternum is yellow-brown, broadly margined with dark-brown; or it may be described as dark-brown with a broad, central, longitudinal, yellow-brown band. The abdomen is of the shape detailed above, and projects well over the base of the cephalo-thorax; the upper side is almost entirely occupied by a broad, longitudinal, boldly and sharply dented, black-brown band, which narrows gradually to the spinners; this band includes the inside halves of the conical prominences, and generally continues over the fore-extremity of the abdomen, ending in an indistinctly angular form; the margins of this band behind the protuberances is very clear and distinct, formed by fine, contiguous, black, and yellowish lines, the hinder part of the band being the darkest; a blackish, transverse band also runs between the points of the protuberances. In front of this transverse band are two yellowish, transverse, angular stripes, and upon and behind it is an elongate, somewhat diamond-shaped, black, central marking, broadly edged with yellowish; this is continued backwards for some little distance, in the medial line, by an obscure band or stripe indicated by its yellowish irregular margins. The sides are obliquely streaked with black, and in some examples there are some longitudinal black streaks close to the under side, which last is usually of a blackish hue, and has two large, round, yellow spots, wide apart, in a transverse line half way between the genital aperture and the spinners. The basal process connected with the genital aperture is strong and prominent; and from it another, similar in form and direction to that of *Epëira diademata*, but broader and stronger, runs backwards, reaching a point midway between the two yellow spots above-mentioned.

This fine spider appears to be very rare in England. The only examples I have seen are four found on low fir trees on Bloxworth and Morden Heaths, and one on Parley Heath between Wimborne and Ringwood. These were all females, excepting one, an immature male, and were found in the month of June many years ago.* I have compared them with Swedish examples of *Epeira angulata*, Clerck., and can find no difference between them. The adult male is unknown to me; the young male alluded to above differs in no way from the female in its colours and markings.

EPEIRA ARBUSTORUM.

EPEIRA ARBUSTORUM, *C. L. Koch.*, Uebersicht d. Arachn. Syst.,
1 Heft., p. 3.

EPEIRA BICORNIS, *Walck.*, *Blackw.*, Spid. Great Brit. and Irel.,
p. 361, pl. xxvii., fig. 260.

The length of the male is about 1-6th of an inch, and that of the female about 1-5th, or rather more.

The form of the abdomen in this spider is very like that of *Epeira angulata*, Clerck., but, not to mention the great difference in the size of the two species, the posterior side of the quadrangle formed by the four central eyes of the present spider is equal in length to the anterior; the angular prominences on the abdomen are also of a much blunter form, and the general hue of the spider is green and grey, mixed and variegated together; the angular points of the dentated band, also, on the abdomen are less well defined, and blunter; and the posterior margin of each denticulation is broadly edged with a black dash; these dashes occasionally meet and form transverse black bars on the hinder part. The under side has a broad, longitudinal, black, central band, margined on each side with a pale, whitish-yellow, slightly-curved stripe. There is some variety in the colours of this spider, the dark parts varying from brown to red-brown and

* Since the above was written I have (in June, 1878) met with an adult female in its snare among the branches of rhododendrons on the borders of the lake at Morden Park, near Bloxworth.

black, and the paler parts from green and yellow, to greenish-yellow and white.

The legs are pale yellow-brown, with black annulations, and the spines on the tibiae of the second pair, in the males, are long and strong.

The palpi (of the male) are short, the cubital joint is prominent in front, whence it projects two exceedingly long, strong, curved, tapering bristles; the radial joint is considerably and obtusely produced on its outer side, and is furnished with numerous hairs and bristles. The digital joint is large, and has, at its base, an obtuse, curved, black, glossy process, whose extremity is directed forwards. The palpal organs are very prominent, and complex, but rather compact.

This spider is abundant at Bloxworth, on lichen-covered apple and other trees where, when motionless, it is almost impossible to detect it, so exactly do its green, grey, yellow, and white and black colours harmonize with the colours of the various mosses and lichens on the boughs of the tree. It appears also to be generally distributed in the South of England, and to occur more rarely in North Wales. It is adult in June and July. The sexes differ but little, except in size, and in the rather more distinct markings of the male.

EPEIRA AGALENA.

EPEIRA AGALENA, *Walck., Blackw., Spid. Great Brit. and Irel.,*
p. 334, pl. xxiv., fig. 242.

„ YOUNGII, *Cambr., Trans. Linn. Soc., 1870, vol. xxvii.,*
p. 461.

The male measures 1-6th of an inch in length, and the female about 1-4th.

The colour of the cephalo-thorax (which is of a rather shorter form than that of *Epeira diademata*, Clerck.) is reddish yellow-brown; the hinder part of the caput is yellow, the whole caput being of a paler hue than the thorax, and pretty thickly clothed with yellowish grey hairs. The eyes are in the usual position,

and those of the fore-central pair are on a strongish prominence. The legs are rather long and moderately strong; their relative length being 1.2.4.3.; they are of a yellow-brown colour, annulated (but often very faintly) with dark brown. The spines on those of the first and second pairs, in the male, are long, especially on the tibial joints.

The palpi (of the male) are short; the cubital joint is prominent in front, and has there two long, strong, tapering, projecting bristles; the outer side of the radial joint is protuberant, and has two finer bristles on it. The digital joint is large, and has a dark coloured, curved process at its base, whose rather enlarged extremity is directed forwards and outwards. The palpal organs are large and excessively protuberant; they are also very complex, with various prominent lobes and processes.

The abdomen is of a sub-triangular form, rounded in front, and projecting (but not greatly) over the base of the cephalothorax. It is thinly clothed with hairs, and its prevailing hue is red-brown, mottled with yellowish; two oblique yellow lines cut off a deep, red-brown portion on each side of the fore-extremity, and between the anterior ends of these dark patches is a somewhat diamond-shaped, dark patch edged with yellow. On the hinder half is a more or less distinctly defined, broad, dentated band, rather darker than the surrounding surface, and its short, blunt, denticulations are marked with black or dark red-brown and yellow. This band is sometimes obsolete, and may be sometimes traced indistinctly also on the fore-half of the abdomen. The sides are marked with some oblique, red-brown streaks, and the under side is of a dark red-brown hue, with a longitudinal, yellowish band on each side.

The male is darker coloured than the female, and its abdomen is of a rather more oval form.

This is not a rare spider on low trees and bushes in shrubberies and woods, in various localities in Dorsetshire. It is also not unfrequent on iron railings on bright sunny mornings in spring and early summer. Mr. Blackwall has found it in North Wales, and I have received it from many parts of England. It

is adult in June and July, and will hardly be mistaken for any other species, if its general reddish, yellow-brown hue, and the dark shoulders of the abdomen are noted. A remarkable variety, received from Scotland, was described (see synonym above) as a distinct species, under the name of *Epeira youngii*.

EPEIRA CORNUTA.

ARANEUS CORNUTUS, *Clerck.*, Sv. Spindl., p. 39, pl. i., tab. 11.

EPEIRA APOCLISA, *Walck.*, *Blackw.*, Spid. Great Brit. and Irel., p. 325, pl. xxiii., fig. 237.

This common spider varies a good deal in size, and also in the extent and depth of colour of the markings on the abdomen.

The male measures from $2\frac{1}{2}$ to 4 lines in length, and the female from $3\frac{1}{2}$ to $5\frac{1}{2}$ lines.

The form of the cephalo-thorax does not differ materially from that of *Epeira diademata*, *Clerck.*; it is of a reddish yellow-brown colour, pretty thickly clothed with grey hairs. The legs are moderately long, and tolerably strong; their colour being yellow-brown, with dark-brown annulations; the spines are not very strong nor long, excepting those on the tibiae of the first and second pairs, of the male, which are stronger and longer than the rest. The palpi are short; the cubital joint has two long, slightly-curved bristles in front; the radial joint is considerably produced on its outer side, and furnished with numerous hairs; the digital joint is large, and has, at its base, a curved process, whose obtuse point is directed outwards. The palpal organs are very large, very prominent, and complex. Near their base is a longish, projecting process, directed downwards, and a little outwards, its extremity being split or bifid; one of the portions of the split part is much stronger than the other, rather enlarged and rounded at its termination; the other portion being pointed.

The abdomen is large, of a rather regular oval form, the fore and hind extremities differing but little in their curve; it projects considerably over the base of the cephalo-thorax, and a great portion of the upper side is occupied by a broad, longitudinal, taper-

ing, black-brown band, dentated, or sinuous, on the margins; this band has a clear, yellowish-white (or whitish-yellow) marginal border, and has, along the centre, a large cruciform or dagger-shaped yellow marking, whose point is directed backwards, and continued by a yellow line or spots, towards the spinners; it is also crossed at right angles by one or more lines of the same colour, and its arms frequently break the margins of the central band, dividing it (mostly in females) into two parts; immediately in front of the cruciform marking and confluent with it, is a large irregularly triangular, yellow marking, enclosing a brown one of the same form, and followed backwards through a great part of the cross by another elongate, brown marking pointed behind; the rest of the upper part (on each side of the lateral band) is yellow, sometimes suffused with reddish-brown, and more or less marked with black-brown. The sides are dull yellowish, mottled and marked with brown, and the under side is black-brown, with a short, curved, yellow, longitudinal stripe on each side of the middle part.

The male and female do not differ in pattern, except that it is more distinct (as also are the colours) in the former sex. The legs of the male are also longer, and are usually less regularly annulated.

Epëra cornuta is generally distributed throughout Great Britain, and is particularly abundant in marshy places, among furze, heather, coarse grass, and rushes, especially on the banks of streams. It spins a large snare, and drawing down the extremities of grass or rush blooms, or of the twigs of small shrubby plants, it forms a somewhat hooded, or dome-shaped domicile, in which it conceals itself, when not in the snare on the look-out for insects; in this retreat it is said to pass the winter also, having first spun up the entrance with silken lines. It is usually adult at the end of summer and in the autumn; some, however, survive the winter—probably immature individuals from the preceding autumn's brood, these attain maturity in the months of June and July, or perhaps in favourable seasons still earlier in the spring.

EPEIRA PATAGIATA.

EPEIRA PATAGIATA, *C. L. Koch., Blackw., Spid. Great Brit. and Irel., p. 329, pl. xxiv., fig. 239.*

In size, form, colours, and pattern this spider nearly resembles *Epeira cornuta*, to which it is very closely allied, and from which some examples of the female are not easily distinguished; it is, however, generally a darker coloured spider, examples being frequent, in which (in the male) the whole, or the greater part, of the dentated band on the abdomen is black, bordered by a yellow line, and with an irregular yellow marking at the middle of the fore-extremity. The palpal organs (of the male) give an unfailing character for the distinction of that sex from *Epëira cornuta*; the prominent downward-directed process at their base, instead of being long, rather slender, and straight, is short, very strong, and curved, the cleft being deep and gaping, and the smaller limb of the cleft part obtuse at its extremity.

Although *Epëira patagiata* inhabits situations similar to those in which *Epëira cornuta* is found, it is (in England) a rare and local spider; in fact, I have myself only met with it in one or two localities in Dorsetshire—at Bloxworth, and in Morden Park—where, in the summers of 1862 and 1863, both sexes occurred on furze bushes, among rushes, and on the lower boughs of trees, in damp places; its snare and habits are the same as those of *Epëira cornuta*.

EPEIRA SCLOPETARIA.

ARANEUS SCLOPETARIUS, *Clerck., Sv. Spindl., p. 43, pl. ii., tab. 3.*

EPEIRA SERICATA, *C. L. Koch., Blackw., Spid. Great Brit. and Irel., p. 328, pl. xxiii., fig. 238.*

This fine spider is closely allied to the two foregoing species; it is, however, larger, the male measuring from $3\frac{1}{2}$ to $4\frac{1}{2}$ lines in length, and the female from 4 to $6\frac{1}{2}$ lines.

The cephalo-thorax is deep brown, clothed with grey hairs, some of which are so arranged as to form a very distinct, trans-

verse, curved line running through the ocular area, and two oblique ones following the direction of the indentations, showing the junction of the caput and thorax, and continuing backwards through the middle of the latter.

The pattern on the abdomen is very similar to that of the foregoing species, but the marginal, yellow line of the dentated band is more sinuous, and is rendered very characteristic in its appearance by being clothed with light grey hairs. The whole abdomen is of a browner hue, the cruciform marking being of a yellow-brown, or light-brown colour. Varieties occur in which the abdomen is entirely black, or nearly so, with the dentated band and cruciform marking delineated by a fine yellow line clothed with grey hairs. The annulations on the legs are broad, distinct, and of a deep brown colour.

The palpi (of the male) resemble those of *Epeira cornuta* more nearly than they do those of *Epeira patagiata*. The digital joint and palpal organs, however, are not so large in proportion to the size of the spider, and the prominent cleft process at their base is shorter and stronger, and differs also in some other minor particulars, as also do the other parts of the palpal organs.

The legs of both sexes are (proportionally) longer than those of *Epeira cornuta*.

Very rare in Dorsetshire—one only, found near Bloxworth, is on record. It is more abundant near Chester, and also near Cambridge.

EPEIRA QUADRATA.

ARANEUS QUADRATUS, *Clerck.*, Sv. Spindl., p. 27, pl. 1, tab. 3.
EPEIRA QUADRATA, *Walck., Blackw.*, Spid. Great Brit. and Irel.,
p. 324, fig. 236.

The male measures from $2\frac{3}{4}$ to 4 lines in length, and the female from 4 to $9\frac{1}{2}$ lines.

The nearly globular form of the abdomen of the female of this large and beautiful spider will serve to distinguish it from all other known British species.

The cephalo-thorax is of a pale brownish-yellow hue, with a central longitudinal, and two lateral stripes of a dark reddish-brown colour. The legs are strong, and (those of the female especially) rather short, of a pale yellow colour annulated with black-brown; the spines on the tibiae of the first and second pairs, of the male, are numerous and strong. The palpi (of the male) are short, and have the same characteristics in the form of the cubital, radial, and digital joints as *Epeira cornuta* and several others. The radial joint has also a strong obtuse projection beneath its fore extremity.

The digital joint and palpal organs are of large size, and the latter are very complex. A strong pointed process projects very prominently outwards and forwards from their base, and another, broad and obtuse, and of a red-brown hue, is situated in front near their extremity.

The abdomen (of the female) is very large, subglobose, and almost conceals the cephalo-thorax when looked at from behind. Its general colour on the upper side varies considerably in different examples, being red, yellow, greenish-yellow, orange, orange-brown, and other tints. Four large, oval, conspicuous, white or yellowish spots, edged with reddish, form a quadrato figure towards the fore extremity, the fore side being the shortest; from the outside of each of the hinder ones of these spots a sinuous line of the same colour, and similarly edged, runs obliquely towards the spinners. These sinuous lines represent the margins of the dentated band which is found very fairly perfect in the male. A longitudinal central line is formed by a series of similar smaller spots, of different shapes and sizes, some of which form, at times, a diamond-shaped figure here and there along the line. There are also other such lines and spots disposed round the margins of the upper side. The sides are generally like the ground colour of the upper part, or rather darker; the under side has a broad dark longitudinal band with yellow lateral margins; and the spinners (which are included in the dark band) are encircled by a ring of yellow spots near their base. The process connected with the genital aperture is some-

what like that of *Epeira diadimata*, but is much broader towards its base.

The abdomen of the male is oval, and has the usual broad, longitudinal, central, dark band on its upper side; this band is sometimes perfect throughout, with the four yellowish spots in a quadrangle, conspicuous; an indistinct brownish-yellow band runs through the quadrangle, both longitudinally and transversely, and forms a large cross, the arms of which cut off the fore part of the dentated band; but more commonly the fore part of this band is very indistinct or scarcely traceable, the four spots also being ill-defined, and confluent with a longitudinal central band of the same hue.

This is one of the largest, and perhaps the handsomest of all our indigenous spiders. It is abundant on furze bushes on heaths and commons at Bloxworth and in the neighbourhood, and is also found in other parts of England and in Scotland; it either sits in the midst of its large strong orbicular snare, or else it may be found tucked up in the form of a round ball under a dome-shaped dwelling placed close at the end of the snare, and formed of silk and bits of the dead material of the bush on which it is constructed.

The colours of the females of this species preserve very badly in spirit of wine unless the spider has been kept for a few days in a dry box without food, previous to being chloroformed and placed in the spirit.

EPEIRA UMBRATICA.

EPEIRA UMBRATICA, *Clerck., Blackw.*, Spid. Great Brit. and Irel., p. 333, pl. xxiv., fig. 241.

The length of the female is very nearly, and in some instances slightly exceeds, $\frac{1}{2}$ an inch in length, and the male is considerably smaller.

The broad, flattened form of both the cephalo-thorax and abdomen of this fine spider are very characteristic. Its general hue is a deep bistre-brown,

The cephalo-thorax is dark-brown, sometimes mixed with red-brown, and thinly clothed with short hoary hairs.

The three groups of eyes are seated on strong prominences, and very widely separated from each other, occupying the whole width of the broad caput. The legs are moderately long, tolerably strong, and of a deep black-brown colour, with pale annulations, which are not always, however, very distinctly defined.

The abdomen is large, flattened, and of a short regular oval form. The greater part of the upper side is occupied by the normal dentated band, of which the denticulations are blunt, and have a narrowish black margin, outside of which is often a narrow yellow one, most conspicuous in the angular intervals between the denticulations; the area of the band is dark brown mixed with yellow-brown, and spotted with black, and sometimes there are traces of a large cruciform marking indicated by small yellowish spots; outside the band the colour is usually paler brown than the band itself, but is also mottled and marked with yellowish and deeper brown. The sides are as dark as the band, and the under side is deep brown-black, with a strong, curved, somewhat elongate-oval, yellowish-white marking on each side of the middle.

The male resembles the female in colours and markings, but its legs are much longer.

The palpi are short and of the normal *Epëira* form and general structure. The radial joint is produced on the outer side, and prominent underneath, and the curved process at the base of the digital joint is notched at its extremity. The palpal organs are large, prominent and complex.

This spider, though not rare, is not often seen, unless specially searched for, owing to its lying concealed during the day under the decayed bark of trees, or in any cracks or crevices of wooden railings, gate-posts, and old timber where it can find shelter. Near such situations as these it spins a large and strong orbicular snare, though not a closely woven one, the lines being at some distance apart. When discovered in its place of concealment the full grown female has been rather happily described as

like a toad in miniature, as it sits with its legs all drawn up close to the body, and the flattened abdomen hunched up over the cephalo-thorax. I have frequently met with this spider (which is adult in May and June) in Dorsetshire, and it is found pretty generally throughout Great Britain. With its nocturnal habits the food of this spider is, in all probability, chiefly small moths.

EPEIRA SOLLERS.

EPEIRA SOLERS, *Walck., Blackw., Spid. Great Brit. and Irel., p. 336, pl. xxiv., fig. 243.*

The length of the male is nearly 1-4th of an inch, and that of the female about 1-3rd.

The cephalo-thorax is of ordinary form; its colour is dark-brown, the caput being much paler, and the whole pretty densely clothed with long, fine, yellowish-grey hairs. The legs are moderately strong, but (in the females) rather short; their colour is yellow-brown with dark reddish-brown blotches and annuli. The spines are not conspicuous; those, however, on the tibiae of the first and second pairs of the male are longer and stronger than the rest.

The palpi (of the male) are short. The radial joint has a slightly curved, dark red-brown apophysis at its fore extremity, rather towards the outer side. The digital joint is tolerably large, and the palpal organs are prominent and complex.

The abdomen is of a very short, broad-oval form, projects well over the base of the cephalo-thorax, and is pretty thickly covered with hairs, which somewhat obscures the pattern. The usual dentated longitudinal band occupies the upper side, and is of a dark brown colour; its margins are not very distinctly defined, and scarcely at all, or at least very bluntly, denticulated; the prominent portions of the denticulations are black, and the whole has a broken, yellowish, marginal line. A large cruciform marking may be generally, more or less distinctly traced by the darker hue, and yellowish margins of the shaft, a single transverso line forming the

arms; in front of this is often a broad transverse yellowish band, with a short prominence running from the middle forwards, also indicated by a yellowish marginal line. In some examples these markings are very clear and distinct, but in the greater number they are not so. The yellow portions are usually rendered more conspicuous by whitish hairs. In some examples the pattern on the central band consist simply of a longitudinal black marking edged with yellowish, and pointed at its hinder extremity; and on each side of it, as it runs backwards, are short transverse black bars edged with yellowish on their fore margins. The sides are paler than the upper part, clothed with whitish hairs, and marked with some short indistinct, oblique, dark stripes. The under side is yellowish-brown, mottled and streaked with dark brown, and there is also a broad, longitudinal, central, black band, with a whitish-yellow curved marking on each side, whose hinder part is much dilated.

This is not a rare spider on Bloxworth Heath, where it spins its snare among heather and low-growing furze, connecting with it, by a silken line, its slightly dome-shaped retreat, which is constructed at a little distance under the shelter of a furze shoot or heather twig. When on the look-out for its prey the female may be found sitting in the middle of her snare; this seems to be mostly the case until she has attained maturity, and then she is commonly to be found, at least by day, in her nest.

Epeira sollers is also found in other parts of Dorsetshire, as well as in many parts of England and Scotland.





FAMILY ULOBORIDES.

THIS family comprises a small group of very remarkable spiders, spinning a more or less perfect geometric snare, like the *Epëirides*, but distinguished from them by a totally different general appearance, by the position of the eyes, the form of the cephalo-thorax and abdomen, and, especially, by having calamistra on the metatarsi of the fourth pair of legs, as well as a supernumerary spinning organ in front of the usual spinners.

Two genera only are at present characterized; both are represented in Britain, but one only has as yet been met with in Dorsetshire.

GENUS ULOBORUS, *Latr.* VELEDA, *Blackw.*

Cephalo-thorax somewhat oblong; transversely depressed at the occiput, and rather flattened above.

Eyes small, rather widely separated; forming two transverse, curved rows, the convexity of whose curve is directed forwards, the posterior row being more strongly curved than the anterior, which is placed near the fore margin, thus separating the eyes of each of the lateral pairs more widely than those of the fore, and hind-central pairs.

Legs moderately strong, tolerably long, and considerably unequal in length—1.4.2.3.—those of the first pair being much the longest.

Maxillæ strong, straight, and enlarged and rounded at their extremities.

Labium short and of a somewhat sub-triangular form.

Abdomen of a somewhat elongate-oval shape (in some species humped near the middle), and clothed with hairs, of which some form small tufts variously disposed.

The spinners of the superior pair are two-jointed.

One species only has yet been found in Britain, and that one has occurred in Dorsetshire.

ULOBORUS WALCKENAERIUS.

ULOBORUS WALCKENAERIUS, *Latr.*, Gen. Crust. et. Ins. 1, p. 100.

VELEDA LINEATA, *Blackw.*, Spid. Great Brit. and Irel. p. 150, pl. x., fig. 96.

The male measures $1\frac{3}{4}$ lines in length, and the female about $2\frac{1}{2}$ lines.

The cephalo-thorax is clothed with short grey hairs, and striped longitudinally and alternately with blackish-brown and brownish-yellow, the central stripe being narrow and of the latter colour.

The legs are brownish-yellow, marked and annulated with dark yellowish-brown; they are clothed with fine hairs, and besides the calamistra on the upper side of the metatarsi of the fourth pair, there are beneath the tarsi, and the hinder extremity of the metatarsi, numerous short, regularly disposed spines.

The abdomen is of an oblong-oval form, and has its fore part, and the hinder part of each side clothed with white hairs; the upper side is of a dull, yellowish-white colour, marked with three longitudinal, dark-brown lines. The sides are marked with several more or less distinct, and very oblique, blackish-brown stripes. The under side is black-brown with irregular, yellowish, lateral margins. The spinners of the inferior pair, are stronger, but rather shorter than the superior ones, the latter being two-jointed. On the upper part of the abdomen are some small tufts of white hairs, but these are very easily rubbed off, so that in some examples they are absent even before capture.

The above description is from examples of both sexes obtained

on Bloxworth Heath in Dorsetshire, and Lyndhurst Heath in Hampshire; all these, however, were immaturo.

It appears to be an exceedingly rare, as well as local, spider in England, and has been obtained only by sweeping the heather with an entomological net. I have never observed its snare in this country. I met with it, however, frequently in Palestine, in 1865, and had many opportunities of seeing it there in its regularly-woven, orbicular snare, in the centre of which there was generally a line, or narrow band, of adhesive, flocculent web, covered with bits of earth, and other *débris*, as well as the remains of its insect food; the spider was usually stretched out upon this band with its legs directed fore and aft in a straight line.

An adult male was sent to me, in 1879, among other spiders, from Wokingham by the Rev. C. W. Penny, of Wellington College. This sex is less distinctly marked than the female, but resembles her very nearly in general characteristics.





FAMILY THOMISIDES.

THE spiders of this family present a general form and appearance impossible to be mistaken, and running through all its genera. This strong family-character results from a, generally, short and broad cephalo-thorax and abdomen, with long anterior (and sometimes also posterior) legs, articulated laterally, *i.e.*, stretching out on each side almost at right angles to the body. Their movements also are unlike those of any other spider, being laterigrade or sideways like a crab, to which, in fact, very many of the most numerously represented genus (*Xysticus*) are exceedingly like. The *Thomisides* spin no snare, but catch their prey by lying in wait and enfolding it with their long fore legs when it is within reach. They are found in numerous situations; on the bare ground, among heather, coarse grass, and herbago of all kinds, also on bushes, and trees, under stones, and in the blooms of flowers. The males, for the most part, run very swiftly, and lead a kind of vagabond life. The eyes are always eight, usually small, and placed in the form of a semi-circle; those of the lateral pairs being more or less widely separated. The terminal tarsal claws are two in number, and the spinners short and compact.

Seven genera, containing in the whole 42 British species, are comprised in this family. All the genera, and 32 species, have been found in Dorsetshire.

GENUS THOMISUS, *Walck. (Thor)*. THOMISUS, *Blackw.*
in part.

Cephalo-thorax broad-oval, truncated in front, and moderately constricted on the lateral margins; the upper fore-corners of the caput are strongly and conically protuberant, the protuberances being divergent (or directed outwards). The eyes are very

small, and differ very little in relative size; the four central eyes form nearly a square, whose fore-side is the shortest; the lateral pairs are placed near the base, on the outer side, of the protuberances. The posterior row has the very slight convexity of its curve directed forwards, and the interval between those of the central pair is greater than that between each and the lateral eye next to it. The clypeus projects forwards, and its height exceeds half that of the facial space.

Legs moderately strong and tolerably long, much longer in the males than in the females; relative length 1.2.4.3. Those of 1 and 2 differ but very little, and similarly in regard to 4 and 3. Spines occur beneath the metatarsi, and the anterior portion of the tibiæ of the first and second pairs.

Palpi short. Digital joint of the male large. Abdomen narrow, and truncated in front, enlarging gradually to a considerable width behind, where, at either corner of the upper side is a short, blunt, conical protuberance; hinder extremity steep and rounded in the female; less steep, and sub-angular, in the male. In this genus, and in fact in almost all the *Thomisides*, there are five circular points, or impressions on the upper side of the abdomen, forming an elongated triangle whose apex is in front.

The relative size of the sexes is very disproportionate. One species only has, as yet, been found in England, and that one has been met with in Dorsetshire.

THOMISUS ONUSTUS.

THOMISUS ONUSTUS, *Walck.*, Tabl. d. Aran., p. 32.

„ ABBREVIATUS, *Walck.*, Ins. Apt. 1, p. 516, and *Blackw.*, Spid. Great Brit. and Irel., p. 90, pl. iv., fig. 54.

The length of the female varies from $3\frac{1}{2}$ to 5 lines, and that of the male from $1\frac{1}{2}$ to 2 lines.

The colour of the cephalo-thorax (of the female) is yellow-brown on the sides, with a narrow, white, lateral margin; the upper side forms a broad, longitudinal, yellowish-white band, including the eyes and conical protuberances; this band is

slightly clouded with light yellow-brown in front of and behind the eyes, where the darker portion is of an angular form.

The legs are pale yellow-brown, often with a longitudinal white stripe beneath the femora.

The spines are short, and placed only beneath the metatarsi and the fore-extremity of the tibiæ.

The abdomen is pale yellow-white, longitudinally rugulose on the sides, and transversely behind. It is often clouded with yellow-brown, especially behind, and on the sides; immature examples are frequently suffused and marked with a delicate pink, but this seems to go off when maturity is attained, and always fades soon after immersion in spirits of wine.

The male is darker than the female. The surface of the cephalo-thorax is thickly covered with minute granulations, each surmounted with a very short spinous bristle, and the sides are of a rich dark roddish yellow-brown, the central band being paler. The clypeus is less in height than that of the female, being equal to half the facial space. The legs of the two first pairs are, proportionately, much longer than the others, and are of a dark brown colour, annulated with light yellow-brown. The annulation is less distinct in the adult than in the immature examples. The two hinder pairs are much paler than the others, being of a dull brownish-yellow hue. The tibiæ and metatarsi are furnished beneath with long bristly hairs and fine spines.

The palpi are short, the radial joint has, on the outer side near the hinder extremity, some minute black tubercles from each of which springs a slender bristly hair; there are also on each side a few longer, stronger, black bristles. The outer side of the fore-extremity is produced into a long, not very stout, slightly-curved apophysis, as long or longer than the joint itself, and its enlarged, obtuse termination is directed downwards, and is sharp pointed underneath. Beneath the extremity of the radial joint, there is also a much smaller, curved, and blunt-pointed apophysis. The digital joint is rather large, and of a round-oval form; the palpal organs are not prominent, and their structure is very simple.

Found, but rarely, on Bloxworth Heath, where it sits among the heather bloom, and in the blossoms of such other flowers as grow on heathy wastes. It is adult in June and July. I have also found it on Lyndhurst Heath, and have received it from the Heath district near Wokingham; and no doubt it is generally dispersed over similar localities throughout the South of England. The Rev. C. W. Penny, of Wellington College, who has kindly sent it to me from Wokingham, tells me that he finds the pink specimens on pink flowers, and the yellower ones on yellow flowers. I have, however, myself found both pink and yellow specimens on the pink blooms of the heather. (See Introduction, p. xxx).

GENUS MISUMENA, *Latr.* THOMISUS, *Blackw.* in part.

This genus is closely allied to the foregoing (*Thomisus*). But among other differences it may be mentioned that the lateral marginal constriction of the caput is less strong; the cephalothorax is rather shorter and broader; the caput has no conical eminences at the fore corners of the upper side (though the lateral eyes being seated on slightly divergent tubercles, those parts have a somewhat sub-angular appearance), and the abdomen, though in the females it is broader behind than in front (in the male it is oval), is rounded at that part, and not angular either before or behind. The clypeus also is scarcely equal in height to half that of the facial space; the eyes of the hinder row are equidistant from each other, and the four central ones form more nearly a square than in *Thomisus*.

The spiders of this genus have similar habits to those of *Thomisus*. Two species only have as yet been recorded in Britain, and one of those is found in Dorsetshire.

MISUMENA VATIA.

ARANEUS VATIUS, *Clerck.*, Sv. Spindl., p. 128, pl. vi., tab. 5.

THOMISUS CITREUS, *Walck.*, *Blackw.*, Spid. Great Brit. and Irel., p. 88, pl. iv., fig. 53.

The length of the male varies from $1\frac{1}{2}$ to 2 lines, and that of the female from 4 to 5 lines.

The cephalo-thorax of the female has a broad, central, longitudinal, pale yellowish-white band, slightly clouded with dusky greenish-brown behind the eyes; on each side of this band is a narrower one of a dull olive-green hue, softening off into the brownish-yellow colour of the remainder, which terminates laterally with a fine marginal whitish line.

The legs of the first two pairs are moderately long, strong, and scarcely different in length; beneath the metatarsi are two longitudinal rows of spines, with a few less strong ones beneath the tibiæ. The third and fourth pairs are much shorter and less strong, but of almost equal length; all are of a yellowish hue, and their relative length is 1.2.4.3.

The abdomen is large and projects over the base of the cephalo-thorax; it is much broader behind than in front, and is rounded at both extremities. The five impressed spots are conspicuous in the form of a regular isosceles triangle on the fore part of the upper side, with sometimes two other similar spots behind them. Its colour is yellowish, but different examples vary a good deal, from yellow to greenish-yellow and greenish-white; a very pretty variety is not unfrequent in which there is a broad irregular, obliquely, longitudinal, blood-red band on each side of the fore half of the abdomen; sometimes these bands are each divided into two large, irregular blotches.

The cephalo-thorax of the male is dark, brownish-black on the sides with a longitudinal, central, whitish-green band, slightly tinged with reddish-brown, in the region of the four central eyes. The legs of the two first pairs are much longer in proportion than those of the female; they are of a dark reddish-brown hue, annulated more or less distinctly with brownish-yellow on the tibiæ and metatarsi; the third and fourth pairs are very short, and of a dull yellowish-green colour. The palpi are short, of a pale hue, excepting the digital joint, which is large, and of a short-oval form. The radial joint is smaller than the cubital, and has a large apophysis at its extremity on the outer side ending in a sharp curved point.

The palpal organs are of simple form and structure, with a small curved spine at their extremity on the outer side.

The abdomen is oval, rather depressed on the upper side, and covers the base of the cephalo-thorax; its colour above is pale greenish-white, with two black, longitudinal, nearly parallel bands on the hinder half, on each side is an irregular longitudinal band of the same colour running to the spinners, and the under side is reddish-brown with a broad, central, longitudinal band of a dark reddish-brown hue approaching to black.

The great dissimilarity between the males and females of this family make it often necessary to describe each sex at length.

This is a common spider in Dorsetshire (and, indeed, in most other parts of England). It may be found on various plants and flowers, in which it lies concealed both by the petals and other parts, as well as very often by its own similarity to them in colour. I have found the female very partial to the blooms of the great mullein (*Verbascum thapsus*), and have more than once seen it catch and kill a bee which had come to suck the honey from the flower. On another occasion I observed one, hidden among the petals of a rose, catch a small copper butterfly (*Chrysophanus phlaeas*), which it quickly overpowered and killed. The bloom of the furze is also a favourite resort of *Misumena vatia*. The males are generally wanderers from plant to plant, and from flower to flower, while the female remains for a long time in one place.

GENUS *DIAEA*, Thorell. THOMISUS, Blackw., in part.

The genus *Diaea* is closely allied both to *Misumena* and *Thomisus*. The curve, however, of the front row of eyes is much less strong than that of the same row in those genera, and the two rows are thus nearly concentric; the lateral eyes of the front row are distinctly larger (in proportion) than those of the two foregoing genera, the interval between the eyes of each lateral pair being also greater. The four centrals form a quadrangle, whose length is greater than its breadth. The abdomen (in both sexes) is oval, and the disproportion in the length of the legs of the two first,

and third and fourth pairs is even greater than that of *Misumena*; and there are also some slender spines on the femora, as well as others throughout the tibiæ and metatarsi. The difference in size between the sexes is not as great as in *Misumena*.

Two species only are recorded as British, and of these one is found in Dorsetshire.

DIEA DORSATA.

ARANEA DORSATA, *Fabr.*, Gen. Insect., p. 249.

THOMISUS FLORICOLENS, *Walck.*, *Blackw.*, Spid. Great Brit. and Irel., p. 76., pl. iv., fig. 44.

The length of the female varies from $2\frac{1}{2}$ to 3 lines, and that of the male from 2 to $2\frac{1}{2}$ lines.

The cephalo-thorax of the female is of a yellowish-green hue, rather whitish on the hinder part of the caput. The legs are of a similar colour, and have some strong spines beneath the tibiæ and metatarsi of the first and second pairs; also a few slender ones on the femora. In some examples the cephalo-thorax and legs (excepting the tarsi and metatarsi) are of a bright clear green, the two joints mentioned being dull brownish-yellow.

The abdomen is oval, of a pale dull yellow hue, and the upper side, which is rather flattened, is almost entirely occupied by a large, oval, dark red-brown area whose margins are more or less irregularly indented and darker coloured than the rest, being also sometimes bounded by an outer yellow edging.

The male has the legs of the first and second pairs slender and of great length; they are of a light reddish-brown colour with the extremities of the joints dark red-brown. The femora are often greenish, spotted underneath with small red-brown spots, and have some long slender spines along their upper sides. The cephalo-thorax is reddish-brown, with an oblique dark red-brown stripe running backwards from each hind-lateral eye; the ocular region is also darkish red-brown.

The palpi are short, of a dull yellowish colour, the digital joint being rather small, oval, pointed at the end, and of a dark brown hue. The radial joint has the outer extremity produced

into a rather long, strong, bifid apophysis; and underneath the joint is another apophysis, curved, but shorter and less strong than the other. The palpal organs are of simple structure, and are almost encircled by a slender black spine.

The abdomen has a dark-brown area on the upper side similar to that of the female, but along the middle of the fore part is a yellowish line followed to the spinners by a series of triangular markings of the same colour; on each side is a longitudinal, dark, red-brown band, leaving a yellowish one between it and the dark area on the upper side.

The green tints on this spider are much brighter in some examples than in others, and they fade away very soon after immersion in spirits of wine, leaving only a dull hue.

Dica dorsata is not rare on trees and bushes in woods and other situations at Bloxworth and Glanvilles Wootton. It has also been met with in other parts of England, as well as in North Wales.

The adult males may often be found in June running on iron railings on bright warm days. They are exceedingly active, and so readily part with their limbs, on being taken hold of, that it is almost impossible to capture a male with the fingers without the loss of several legs. They should, therefore, only be caught with an empty glass tube being placed carefully over them as recommended at p. xxxix. There are few prettier British spiders than the present when adult and in good condition.

GENUS XYSTICUS, *C. L. Koch*. THOMISUS, *Blackw.*, in part.

The spiders of this genus bear a close general resemblance to those of *Dica*. They are, however, of a shorter, stouter, stronger build; the legs of the two first pairs are also shorter, and always have spines on all the metatarsi, tibiae, and femora. The fore-lateral eyes are more distinctly larger than the rest, and the four centrals form nearly a square figure, but almost always rather broader than long. The laterals are seated on confluent tubercles.

The abdomen is much broader behind than in front, its cuticle is of a very firm texture, and (as well as the cephalo-thorax) it is clothed thinly with rather long, prominent bristles or bristly hairs.

In distinguishing the male spiders of this genus (some of which are remarkably similar in general appearance, colours and markings) the apophysis at the extremity of the radial joints of the palpi, as well as the processes of the palpal organs, must be carefully examined, since these afford unfailing characters for determining the species. This is so, of course, in regard to all spiders, but their help is more necessary here than in some other genera. The palpi are always short; the digital joint is large, of a short, broad-oval form pointed at the extremity. The difference in the relative size of the sexes is not excessive.

The characteristic abdominal pattern, in both sexes of *Xysticus*, is a broad dark area on the upper side, occupying almost the whole surface, and taking its form from that of the abdomen, on the upper side of which there is a longitudinal, strongly dentated, pale band, varying in the greater or less perfection of its outline, and in its breadth, as well as in the presence or absence of spots and other markings on it. The broad area mentioned will be referred to in the subsequent descriptions as simply *the upper side*, even though sometimes no more of it is left unoccupied by the central dentated band than an irregular border. The central band will also be simply referred to as *the dentated band*.

The cephalo-thorax also has a distinctive pattern, very similar in all the species of *Xysticus*, and to which allusion must be made here. A broad, central, longitudinal, pale band runs to, and often through and beyond, the ocular area; at the fore end of this band (beginning close behind the eyes) is a dark marking of an angular form, the point of the angle directed backwards. Sometimes this marking is of a wedge-shape, and sometimes curvi-lateral or spade-shaped; sometimes, when of the latter form, there is a wedge-shaped dark marking within its area, and in this case it is of a paler hue than the rest of the

band. The different form, extent and colouring of this marking is almost always a good specific character. It will be referred to in the following descriptions as *the central marking*.

The genus *Xysticus* comprises sixteen known British species, of which twelve have already been met with in Dorsetshire. They are found on low plants, underwood, the lower boughs of trees, particularly old oaks, and furze bushes, especially when the latter are in bloom, also under stones, among moss, and at the base of grass stems and other herbage as well as on the ground. The males of some species may frequently be seen running on roads and pathways in the bright warm weather of spring and summer.

XYSTICUS VIATICUS.

XYSTICUS VIATICUS, *C. L. Koch*. Die Arachn., vol. xii., p. 70, pl. 412, figs. 1003-4.

THOMISUS VIATICUS, *Cambr.*, Trans.-Linn. Soc. xxviii., p. 528.

XYSTICUS VIATICUS, *Ibid.*, Ann. and Mag. N.H., s. 4, p. 253.

The length of the male is 2 to $2\frac{3}{4}$ lines, and of the female 3 to $3\frac{3}{4}$ lines.

The cephalo-thorax is furnished with strongish, prominent bristles, and is thickly marbled on the sides with deep reddish-brown and yellow; the longitudinal band is of a dull brownish orange-yellow, or yellowish-white hue, and the *central marking* is long and generally of a regular wedge-shape; its fine point reaches backwards to the thoracic junction; its colour is also deep reddish-brown, longitudinally striated, and marbled with yellow.

The legs are strong and tolerably long—1.2.4.3. They are of a brownish-yellow colour, the femora (and in a less degree the genual and tibial joints also) spotted, marbled, and suffused with deep red-brown, most densely on the upper side; the two latter joints have also, on that side, a longitudinal whitish line. The spines are tolerably long, and strong.

The palpi are dull yellow-brown, mottled and suffused with reddish-brown. The digital joint has a strong prominence at

the middle of its outer side. The radial joint is slightly shorter than the cubital, very strong, and has a short, straight, stoutish, obtuse apophysis at the extremity of the outer side, and fitting closely to the edge of the digital joint (this *outer apophysis* is very similar in all the species of *Xysticus*); beneath the joint is another of equal length, obtuse, and truncated at the extremity, which has also an angular point at its inner, or under, corner. The palpal organs are encircled by a strong black spine, whose fine point is curved, and in connection with the extremity of the prominence on the outer side of the digital joint and close to the extremity of the outer radial apophysis. At the hinder part of the palpal organs are two strong, prominent, nearly adjacent, very characteristic, bent processes. One of these (the posterior) is enlarged at its extremity, something in the form of a clubbed foot; the anterior one has its extremity obtuse and strongly curved, and at about the middle of the fore side there is a small prominent, sharp, tooth-like projection.

The abdomen is furnished with strong bristles, and is of an oval form, flattish above, obtusely pointed behind, and truncated in front. It is of a deep brown colour, tinged with reddish on the upper side, and bordered distinctly with yellowish-white. The *dentated band* is well defined, but broken edged and yellowish-white; it consists of a series of 3.—4., somewhat curvi-linear, triangular markings connected together, and of which the anterior one is obtuse at its apex, and occupies the fore-half of the upper side; the two posterior ones being sometimes no more than transverse curved bars; this band is sometimes suffused with reddish-brown forwards, and is usually thinly spotted with deep red-brown, in addition to the ordinary impressed spots, of which the three anterior ones form a conspicuous triangle on its fore part. The sides and under part are of a warm brown colour, tinged with reddish, and the latter has two, widely separated, longitudinal, indistinct, whitish, curved bands.

The female resembles the male in markings, but her colours though very distinct, are paler; the legs are shorter, and the abdomen is much broader behind than in front. Some examples

of the male are also much darker and richer coloured than others.

Found, though very rarely, at Bloxworth and Glanvilles Wootton; but more abundantly among short herbage and grasses on the Weymouth shores of the Chesil Beach, close to Portland, in the months of June and July. I have also received it from Scotland.

XYSTICUS CRISTATUS.

ARANEUS CRISTATUS, *Clerck.*, Sv. Spindl. p. 136, pl. vi., tab. 6.

THOMISUS CRISTATUS, *Blackw.*, Spid. Great Brit. and Irel., p. 68, pl. iv., fig. 38.

This spider is very closely allied to *Xysticus viaticus*, C. L. Koch; it is, however, usually rather smaller. The male measures from 2 to 2½ lines, and the female from 3 to occasionally 4 lines. In colours and markings the resemblance between the two species is exceedingly close; the fore part, however, of the *dentated abdominal band* in the male is less spotted, frequently without spots at all. The *central marking* on the cephalo-thorax is wedgo-shaped like that of *Xysticus viaticus*, but is more oven on its edges, and is often placed on an oval, whitish patch, which does not extend quite to the extreme point of the central marking, and forms a sort of curved white border to the greater part of it. The bristles on the cephalo-thorax and abdomen are much shorter, and less strong than those of *Xysticus viaticus*; but the most tangible point of distinction, in the male, is in the form of the two posterior, prominent processes of the palpal organs; the hinder one of these is shorter, broader, of a somewhat concave form, pointed at its slightly bent extremity, and has a short, sharp, erect, thorn-like point on the outer side in front of its base. The anterior process is first strongly bent forwards, and then sharply curved at right angles, with its acute point directed inwards, and just on the outer side of the last bend is a short, conical, but sharpish, point.

In other respects the form and structure of the palpal organs are very like those of the last species.

The female is by no means so easily distinguished from that of *Xysticus viaticus* as the male; perhaps the most reliable distinguishing character is the commonly far less strong, and shorter, bristles on the cephalo-thorax and abdomen. There is, however, some slight difference in the spiny armature of the femora of the first pair of legs, though I am not yet convinced of its constancy; and the abdominal markings are usually paler and less distinctly defined.

Xysticus cristatus is one of our most abundant and generally distributed British spiders. It is found in spring and summer in fields and waste grounds, among grass and herbage as well as on low plants and furze bushes, also among moss and under stones. The males may often be seen crossing roads and pathways at a swift pace, as well as on bare sheltered patches, sunning themselves under the fringe of grass or other surrounding herbage. So far as my own experience goes I have not found *Xysticus cristatus* in any abundance, in fact scarcely at all, in the locality where *Xysticus viaticus* has frequently occurred, though, no doubt, they do occur together. In order to guard, as much as possible, against mixing the females of the two species together, those of this sex, found where the males of *Xysticus viaticus* occur in plenty, should be kept carefully separate from all others.

XYSTICUS PINI.

Thomisus pini, Hahn., *Dio Arachn.* I., p. 26, tab. viii., fig. 23.

Xysticus audax, C. L. Koch. *Blackw.*, Spid. Great Brit. and Irel., p. 70, pl. iv., fig. 39, sub *Thomisus*.

This spider is very closely allied to *Xysticus cristatus*, Clerck.; it is, however, usually rather smaller. The male measuring $1\frac{3}{4}$ to $2\frac{1}{4}$ lines in length, and the female from $2\frac{1}{2}$ to 3 lines.

The general pattern of *Xysticus pini* closely resembles that of *Xysticus cristatus*, but its colouring is commonly richer, the darker parts (of the male especially) being much more nearly black, and the lighter parts often white. There is, however, a

lighter yellow-brown variety (common in Germany), but which I have never met with yet in England. This variety is very difficult to distinguish, at first, from *Xysticus cristatus*. The *central dark marking* on the cephalo-thorax is, however, always much shorter than that of *Xysticus cristatus*, and is curvi-lateral, forming the hinder half of a pointed-oval figure, the space behind this is white, or yellowish; and its termination, just short of the thoracic junction, is of a similar form. The dark central marking is sometimes very dark (almost black), and distinctly defined, with occasionally some yellowish marks on it; at other times it is paler, with some dark blotches upon it, but it never runs backwards in a long, tapering, wedge-shape, as in *Xysticus cristatus*. The legs are usually more distinctly marbled. The palpi are very similar in general structure, but the anterior, prominent process towards the base of the palpal organs differs in the very decided T-shape it assumes. The upright portion of the T is shorter and less bent than the corresponding part of that process in *Xysticus cristatus*, and the top (or cross piece) is at right angles to the stem on both sides, though the arm on one side is longer and slonderer than the other. The posterior process, though very similar in form to that of *Xysticus cristatus*, is larger in proportion, and its pointed extremity is rather longer. The abdomen is of a shorter-oval form, and, in the abdominal pattern, the upper side, of our commonest variety, is black-brown; the *dentated band* is white, or yellowish-white, very distinctly defined, and seldom marked with dark spots or markings; when these are present they are few and minute. The sides are yellowish-brown, spotted with white, often marked with slightly oblique, indistinct lines of dark spots, which emanate from the margins of the upper side.

Another, less abundant, variety has the upper side of a much lighter hue, being of a dull greyish olivo-brown colour, marked with irregular black spots on the outer margins, and on the posterior sides of the angles of the dentated band, which is of a greyer hue. The black marking behind the anterior angle on each side of the dentated band is stronger than the rest, and gives the

abdomen a very characteristic look, not at all unlike that of the next species—*Xysticus sabulosus*, Hahn. The female varies very much in the generally darker or lighter shade of its colouring, but, perhaps the most usual variety is very like that of the male last described. The female has also at the hinder extremity on each side of the cephalo-thorax an almost always well defined spot, breaking out of, and of the same colour as the central whitish band. The *central dark marking* behind the eyes is seldom well defined in this sex, and often quite obsolete. Some examples have the sides and fore part of the abdomen suffused with red-brown.

The only situation in which I have found this species, in any abundance, is on furze bushes, when in bloom, growing on the outskirts of woods which border upon heaths and commons, in the months of May and June. In such situations it is tolerably abundant at Bloxworth and in the neighbourhood; I have also received it from Glanvilles Wootton—from Mr. C. W. Dale—and have met with it in abundance near Oxford. It has been found also in other parts of England as well as in Scotland.

XYSTICUS SABULOSUS.

THOMISUS SABULOSUS, *Hahn.*, Die Arachn. I., p. 28, tab. viii., fig. 4.

„ „ *Blackw.*, Spid. Great Brit. and Irel., p. 72, pl. iv., fig. 41.

THOMISUS RUFOPICTUS, *Cambr.*, Trans. Linn. Soc. xxxviii., p. 436.

Adult male length, $2\frac{1}{2}$ lines; female, 3 lines.

In general appearance this spider bears considerable resemblance to very pale varieties of *Xysticus pini*, Hahn. It is, however, usually a much larger spider. The sides of the cephalo-thorax are brown, varying in shade from pale yellow-brown to reddish and dark brown, slightly peppered, as it usually is, with very fine grey points, and the margins are yellowish white. The central longitudinal band is broad, and greyish-white, the *normal dark mark-*

ing on the fore part (close behind the eyes) is of a pointed oval form at its hinder extremity; it is of a brownish hue, always faint and often obsolete; on each side towards the hinder extremity of the central longitudinal band is a patch of a much deeper brown than the rest.

The legs are marbled with white, yellow-brown, and various shades of red-brown; sometimes, but not often, in a somewhat irregularly annulated form.

The *palpi* are short, the radial joint has two apophyses at its extremity on the outer side, the foremost of these is rather obtusely pointed, and the hinder one is depressed and rounded at its extremity.

The digital joint is of moderate size, and the palpal organs are neither very prominent nor complex.

The *abdomen* is oval (in the female it is broader behind than in front) and somewhat flattened on the upper side. This is of a dull brownish-grey hue, more or less marked and peppered with black, and broadly margined with greyish-white; the *dentated band* is greyish-white, slightly speckled with minute dark points, and tolerably well defined; it differs from that of the three foregoing species, by its getting much narrower, after the two first denticulations, and being then but very slightly denticulated during the rest of its progress to the spinners. Close behind the foremost denticulation, on each side, is a strong, but short, transverse conspicuous, black bar, which, together with the black spots in the shallow denticulations near the hinder extremity of the band, give a strongly distinctive character to the abdominal markings of this species. The sides are dark grey, marked with several broken oblique lines of black spots, which emanate from the upper side, crossing also its white marginal border. The under side is of a pale greyish yellow-brown colour. In some examples the fore part of the upper side (on each side of the dentated band) is red-brown, now and then of a brightish rust-red hue, the dentated band being also much darker than usual. This variety has been described as a distinct species—*Thomisus rufopictus* (l.c. supra) though with a conjecture at the time that

it might possibly be a variety of *Xysticus sabulosus*. The sexes do not differ much, excepting that the males are usually darker than the females.

This spider is not rare on sandy and gravelly heaths at Bloxworth and in the neighbourhood; it may be seen on the bare spots where turf has been cut, and on which it loves to sun itself on the bright warm days of spring and early summer; it is, however, not easily detected, its grey, black, brown, and red-brown colours, making it look exactly like the minute grey, mottled stones with which these bare spots almost always abound; in fact, after many years experience, I am myself almost unable to detect it until it moves, which it always does, at least to the extent of drawing in its extended legs when it is closely approached; by this slight movement it can be easily detected.

Although not rare, I have in the course of more than twenty years found but very few males in the adult state, and, fewer still, of the adult female. It is adult at the end of summer and beginning of autumn; but immature examples may be found throughout the year.

XYSTICUS LANIO.

XYSTICUS LANIO, *C. L. Koch.*, *Die Arachn.* xii., p. 77, pl. 414, fig. 1009-10.

„ „ *Cambr.*, *Trans. Linn. Soc.* xxviii., p. 436.

The length of the male is from $2\frac{1}{2}$ to $2\frac{3}{4}$ lines, and of the female from 3 to $3\frac{1}{4}$ lines.

In its general form this spider resembles *Xysticus cristatus*, Clerck, and *Xysticus viaticus*, *C. L. Koch.*, but it may be at once distinguished by the yellow-red tone of its colouring, as well as by differences in the shape of the markings, both of the cephalo-thorax and abdomen.

The sides of the cephalo-thorax of the male are of a rather bright roddish hue, slightly mottled with yellow; the longitudinal band is pale yellow; and the central marking behind the eyes is short and, generally, curvi-linearly pointed at its hinder extremity, beyond which is the usual yellowish-white prolongation, or

reduplication, reaching to the thoracic junction. The colour of the central marking is similar to that of the sides of the cephalo-thorax, from which its anterior portion is usually separated by a narrow, yellowish-white, lateral margin. The ocular region is yellowish, and the surface of the cephalo-thorax is covered with strongish bristles.

The legs are rather lighter coloured than the cephalo-thorax, and are mottled, and sometimes linearly striped, with a whitish hue. The spines are numerous and strong.

The palpi are short, and similar to the legs in colour. The radial joint is equal to the cubital in length, and has a not very large, pointed apophysis at its extremity on the outer side, adhering closely to the side of the digital joint, with a much larger, obtusely truncated one underneath. The digital joint is of moderate size, oval, pointed in front, and marbled with whitish. The palpal organs are not very complex; at their hinder part are two prominent processes, the anterior of which is the strongest, longest, and enlarged at its extremity.

The abdomen is oval, truncated in front, and covered thinly (like the cephalo-thorax) with prominent bristles. The upper side is of a dark red-brown hue, margined, but rather narrowly, with dull yellowish-white. The dentated band is yellowish-white, marked with a few red-brown points, and its fore part is, occasionally, strongly suffused with red-brown. The lateral indentations of this band are much deeper than in *Xysticus cristatus*, and the denticulations are consequently much longer, but narrower, giving the abdomen a more transversely-banded appearance. The foremost of the usual five depressed spots is large, of a reddish-brown colour, and conspicuous near the fore extremity of the dentated band. The sides and under part are of a warm reddish-brown colour, slightly mottled with whitish.

The female is like the male in its markings, but is of a much paler and duller hue, and the abdomen is broader and rounder towards its hinder extremity.

This very pretty species is not rare at Bloxworth and in other parts of Dorsetshire on low trees and underwood (especially in

oak woods) in the month of June. It is also found in various localities in England, and I have received it from Scotland.

XYSTICUS LUCTUOSUS.

THOMISUS LUCTUOSUS, *Blackw.*, Spid. Great Brit. and Irel., p. 78, pl. iv., fig. 45.

This spider is nearly allied to *Xysticus lanio*, C. L. Koch., and resembles it closely in size and form; it has not, however, the red hue, characteristic of that species, the dark parts being of a deeper brown colour; it is also less bristly, and its pattern is less distinct.

The sides of the cephalo-thorax of the male are of a very deep, rich, blackish-brown hue, slightly marbled and streaked with yellow-brown, and with a narrow, yellowish, marginal line. The longitudinal band is rather narrow at the hinder part, and is of a brownish-yellow colour. The central marking, behind the eyes, is similar in colour to the sides, frequently marbled and striped with brownish-yellow; its fore part is somewhat quadrate, and its hinder part, the sides of which are hollow or incurvated, is drawn out, to the thoracic junction, into a sharp linear point; there is often a slight gap, or break near the point, around which the colour is yellow.

The legs have the femora of the first two pairs of a deep brown colour, tinged with red, and slightly marbled with brownish-yellow. The tibiæ and genua are rather paler, and marked also with whitish-yellow; the metatarsi and tarsi are pale yellowish-brown; the spines are not nearly so numerous nor so strong as in *Xysticus lanio*.

The palpi are short, the colour of the humeral joint is like that of the femora of the legs; the cubital, radial, and digital joints are yellowish-brown; the radial is rather shorter than the digital joint, and the apophysis at its extremity, on the outer side, is long and pointed, while that underneath is much stronger, and has a crescent-shaped termination¹.

The palpal organs are of very simple structure, with no prominent processes.

The abdomen is truncated before, a little broader behind, and obtusely pointed at its hinder extremity. The upper side is deep brown, slightly tinged with reddish, and irregularly margined with yellowish-white; the dentated band is generally more or less obsolete, being usually only traceable by some broken, transverse, yellowish-white lines or markings; occasionally it is more distinct, but it is even then much marked and suffused with dark reddish-brown, and its outlines are always broken and irregular. One example, however, in my possession has this band quite free from dark markings, and almost exactly like that of *Xysticus lanio*, but with less regular edges.

The female is much lighter coloured and less distinctly marked than the male. The dentated band on the abdomen is scarcely defined at all, being only of a very little lighter hue than the rest; the whole abdomen is of a dull brownish colour, thickly and minutely freckled with whitish, as well as with darker points interspersed here and there with a larger red-brown spot.

This is rather a rare spider, but I have found it occasionally by sweeping among low plants, grass, and other herbage in open places in woods, at Bloxworth, in June and July. It has also been found in North Wales. It may be distinguished without much difficulty from its congeners by its indistinctly defined, abdominal markings, and its generally dark colours, as well as by the form of the central marking behind the eyes.

XYSTICUS ROBUSTUS.

THOMISUS ROBUSTUS, *Hahn.*, *Die Arachn.* I., p. 50. tab. xiii., fig. 38, A.C.

XYSTICUS MORIO, *C. L. Koch.*, *Die Arachn.* IV., p. 51, tab. cxxv., fig. 289.

„ „ *Cambr.*, *Trans. Linn. Soc.* xxviii., p. 436.

Length of the male, $2\frac{3}{4}$ lines.

This fine spider may be easily recognised by its short, broad,

robust form, and almost uniform, rich, deep black-brown colour, slightly marbled with yellow-red, and by the structure of the radial joint of the palpus. There is but little trace of the longitudinal band on the cephalo-thorax; but the central marking behind the eyes is traceable by a broken marginal reddish-yellow line. It is also more marbled with yellow-red than the sides of the cephalo-thorax, and is sometimes divided longitudinally by a very deep black-brown stripe.

The legs are strong, and moderately long. The femoral and genual joints are of the same colour as the sides of the cephalo-thorax, though rather more marbled with yellow and yellow-red; the tibiae, tarsi, and metatarsi are much paler.

The palpi are similar in their general form and appearance to others of this genus, and are like the legs in colour; the radial joint has *three* apophyses at its extremity—two on the outer side and one underneath; the latter is strong, prominent, obtuse at its extremity, and curved. The upper one of the other two is stronger and longer than the lower one, both being somewhat pointed. The digital joint is rather large, and the palpal organs are neither very prominent nor complex.

The abdomen, which (as well as the cephalo-thorax) is covered with short bristles, is short, broad, and truncate before, and broader behind than in front. It projects considerably over the base of the cephalo-thorax, to which its general colouring is also very similar. The dentated band on the upper side is generally almost obsolete, or only traceable by some small, scattered, yellowish-white spots, indicating the different denticulations; the usual pale marginal border of the upper side is also represented only by a few similar spots round that part; now and then the dentated band is also traceable by its being of a slightly paler hue than the rest of the surface.

This is an exceedingly rare spider; I have met with only one example during twenty-five years—an adult male, sunning itself on a bare patch of sandy heath, at Bloxworth, in the month of May, 1854. I am unacquainted with the female; according to M. Simon, however (*Arachn.*, de France, tom II.

p. 197), it would appear to differ from the male only in size, and in being of a paler hue. Its habitat, according to that author, is under stones in woods.

XYSTICUS CAMBRIDGII.

THOMISUS CAMBRIDGII, *Blackw.*, Spid. Great Brit. and Irel., p. 81, pl. iv., fig. 54.

The female (which is the only sex at present known of this fine and handsome spider) measures 3-10ths of an inch, or very nearly four lines, in length.

The sides of the cephalo-thorax are yellowish-brown, mottled with yellowish-white, and with the lateral margins and longitudinal band, also of a yellowish-white colour. On each side, near the hinder part of this band, is a largish black patch. The central marking, behind the eyes, has a curvi-linear, short point at its posterior extremity; being, however, very indistinctly traceable, and of a yellowish-brown colour. Just above the falcis is a transverse marginal row of short, prominent, bristles.

The legs are short and strong; those of the two first pairs are yellowish-white, marbled, suffused, and patched with red-brown, but least so in front of the femora of the first pair. The colours of the third and fourth pairs are very similar, but differently distributed; being pretty distinctly annulated with yellowish-white, and deep blackish red-brown. The spines are short and strong. The abdomen is rounded, and much broader behind than in front; the upper side is thinly furnished with short, strong bristles; it is of a dull, rather greyish red-brown hue, and has no marginal border. The usual dentated band is only traceable by one or two pale, indistinct, slightly oblique, transverse lines; but there is a more conspicuous, longitudinal, central, narrow, yellowish stripe, which does not, however, touch either the fore or hinder extremity. The sides and hinder part (above the spinners) are pale yellowish-white; the former have some indistinct, black, oblique streaks, and the hinder part is thinly, but rather regularly, spotted with black; the under side is suffused with brown.

A single example of this spider is the only one yet recorded. It was found on a bare sandy spot, among heather, at Bloxworth, in September, 1857.

XYSTICUS ERRATICUS.

THOMISUS ERRATICUS, *Blackw.*, Spid. Great Brit. and Irel., p. 71, pl. iv., fig. 40.

The length of the male is $2\frac{1}{2}$ lines, and that of the female $3\frac{1}{2}$ lines.

The cephalo-thorax is short and broad. The colour of that of the male is reddish yellow-brown; the central longitudinal band is bordered on each side by a broadish, deep, red-brown, stripe; and the lateral margins have a similar, though rather paler, stripe. The central marking, behind the eyes, is defined by a narrow, but clear, whitish-yellow, marginal line; the form of its pointed posterior extremity is curvi-linear, and it is sometimes divided longitudinally by a red-brown line.

The femoral and genual joints of the two first pairs of legs are of a deep blackish, red-brown colour; the tibiæ, metatarsi, and tarsi, as well as the whole of the third and fourth pairs being of a reddish-yellow hue; the femora of all four pairs are usually marked underneath with a longitudinal yellowish line. The spines are tolerably long, numerous, and rather strong.

The palpi are of the ordinary form, and of a brownish-yellow colour, tinged with red, the humeral joint being the darkest. The radial joint has a pointed apophysis at its extremity on the outer side, and another prominent one beneath. The digital joint is round-oval, pointed in front, and of tolerable size. The palpal organs are not very complex, but have one or two strong, prominent processes near their base.

The abdomen is oval, truncated before, rather rounded behind, and projects well over the base of the cephalo-thorax. The upper side is of a dark red-brown colour, variegated with yellowish white; the longitudinal dentated band is rather well defined, and of a yellowish-white colour, marked usually with a more or less strong, longitudinal, red-brown, irregular stripe

which is itself commonly bisected longitudinally by a yellowish line. The third or last denticulation (on the hinder part) is represented by a transverse yellow-white stripe, generally detached from the main band. The under side and sides are of a dull red-brown colour.

The female is much lighter coloured than the male, and its markings, though resembling those of that sex, are very indistinct. The edges of the upper side of the abdomen are marked with, here and there, a black spot.

This is a rare spider, but it occurs occasionally at Bloxworth running on footpaths and bare spots in meadows in the month of June. On one occasion (in 1878) I found an adult male among moss and grass in a damp meadow, as late as the 21st of September. It has also been met with in other parts of England, as well as in North Wales and Scotland.

XYSTICUS ULMI.

THOMISUS ULMI, *Hahn*. Die Arachn. I., p. 38, Tab. x., fig. 30.

„ WESTWOODII, *Cambr.*, Trans. Linn. Soc. xxvii., p. 403, pl. 54, No. 7.

XYSTICUS BIVITTATUS, *Westr.*, Aran. Succ., p. 417. (in part).

The male measures 1-6th of an inch, or 2 lines, in length; the female is rather larger and considerably more robust.

This spider is nearly allied to *Xysticus erraticus*, Blackw., resembling it very closely in colours and markings. It may, however (in the male sex), be distinguished without much difficulty, first by the form of the abdomen, which is of a more elongated shape; next by the form of the dentated band on the abdomen, the denticulations on the hinder part being represented by transverse stripes, the foremost (and frequently the second) being very distinctly defined; in fact, the foremost cuts the upper side into two parts in a very conspicuous way. The fore part of this band is sometimes slightly suffused with reddish-brown, and always has six or eight small red-brown spots

arranged in pairs, or in two longitudinal parallel rows of three or four each.

Another distinguishing character is furnished by the greater breadth of the red-brown longitudinal bands on each side of the central band of the cephalo-thorax. The normal central marking also behind the eyes differs, being dark reddish-brown, and of a long wedge-shape; the outline, however, is not always straight, but is sometimes rather convexly curvi-linear, and surrounded by a yellow curvi-linear margin which reaches almost to its extreme point.

The legs are, as nearly as possible, like those of *Xysticus erraticus*, the femora and genua being deep reddish-brown, and the rest pale, dull yellow, tinged with olive, and generally marked with a longitudinal, white line on the outer sides of the tibiae.

The digital joints of the palpi are rather smaller than those of *Xysticus erraticus*; the radial joint has a short blunt-pointed apophysis at its extremity on the outer side, closely adhering to the side of the digital joint, and a very strong one beneath, prominent, and rather rounded at its extremity. The palpal organs are not very complex; near their centre, or rather behind it, are two short, prominent, curved corneous processes, one of which is obtuse and slightly enlarged at its extremity, the other sharp-pointed. These organs are also (like those of several other species of *Xysticus*) surrounded by a black spine.

The female is marked like the male, but is very much paler coloured, and the abdomen is (proportionally) broader towards its hinder part.

This is an exceedingly rare spider in the neighbourhood of Bloxworth, being found among low plants, coarse grass, rushes, and other herbage in damp situations in May and June. I have also received it from Glanvilles Wootton from Mr. C. W. Dalo. It appears to be much more abundant at Wick Copse, in the neighbourhood of Oxford, where I found numerous examples in May and June, 1872, in a similar situation to that mentioned above.

XYSTICUS BIFASCIATUS.

THOMISUS BIFASCIATUS, *C. L. Koch., Blackw., Spid. Great Brit. and Irel., p. 79, pl. iv., fig. 46.*

„ „ *Cambr., Trans. Linn. Soc. xxvii., p. 408, pl. 54, No. 9, c.f.g.*

The length of the male is $3\frac{1}{4}$ lines, and of the female $3\frac{3}{4}$ to $4\frac{1}{2}$ lines.

In its short robust form this spider very nearly resembles *Xysticus robustus*, Hahn., but it differs in its colours, as well as notably in the structure of the palpi and palpal organs.

The cephalo-thorax of the male is of a dark red-brown hue on the sides, which are finely, but not densely, striped and marked with yellowish-red along their middle portion. The longitudinal band is of a pale, dull, brownish-yellow colour. The central marking, behind the eyes, is large, and sharp pointed at its posterior extremity, but of a somewhat sinuous outline, and distinctly margined with cream-yellow. On each side (towards the hinder extremity) of the central band is a black patch.

The legs are striped longitudinally, on their outer sides, with yellow-brown, dark red-brown, and yellow; the anterior parts being reddish-brown, mottled with yellowish. The two foremost pairs are rather darker coloured than the third and fourth.

The palpi are short and strong. The radial joint has a pointed apophysis at its extremity on the outer side, closely adhering to the digital joint, and a strong obtusely-pointed one beneath, rather prominent on either side towards its end. The digital joint is rather large, roundish at its hinder part, and pointed in front. The palpal organs are not very complex; near their centre are two closely-contiguous, rather long, prominent, slightly curved, spine-like processes, one of which has a strongish conical projection near its base.

The abdomen is oval, broader behind than in front, and projects well, and closely, over the base of the cephalo-thorax; the upper side is of a dark reddish, slightly yellow-brown colour, margined, but not very conspicuously, with cream white,

and a little paler along the middle. The dentated band is scarcely traceable, being represented only by three oblique, cream-yellow lines on either side; the foremost line, being more oblique than the rest, and indicating the position of the first denticulation; there is sometimes, also, a short, pale, longitudinal, central line on the upper side. The sides and underside are of a uniform, dull, reddish-brown hue.

The female is paler coloured than the male, but resembles it very nearly in its markings.

This is a rare spider, but it occurs occasionally among herbago, and also running on bare spots in meadows, as well as under stones, at Bloxworth and Portland, in May and June.

It is met with also in North Wales, and I have received it from various other parts of England, as well as from Scotland.

XYSTICUS LUCTATOR.

XYSTICUS LUCTATOR, *L. Koch.*, Beitr. z. Kenntn. d. Arachn.-Fauna. Galizions., p. 29.

„ IMPAVIDUS, *Thorell.*, Syn. Europ. Spid., p. 230.

THOMISUS CAMBRIDGII, *Blackw.* (in part), *Cambr.*, Trans. Linn. Soc. xxvii., p. 406., pl. 54., No. 9., a.b.c.d.

The length of the male is 3 lines.

This spider is closely allied to *Xysticus bifasciatus*, C. L. Koch., but is more richly coloured, and differs in the structure of the palpi and palpal organs.

The sides of the cephalo-thorax are bright, dark, brownish-red, veined and marked with reddish-yellow. The longitudinal band is yellow, and the central marking (similar in shape to that of *Xysticus bifasciatus*) is reddish yellow-brown, streaked and veined with yellow. On each side of the central band towards its extremity, is a patch of a much deeper hue than the rest.

The femora and genua of the legs are deep reddish-brown, obtusely mottled with yellowish; the tarsi, metatarsi, and tibiae yellowish-red; the latter, as well as the genua, striped on the upper side with cream-white.

The palpi are deep reddish-brown; the outer terminal apophysis of the radial joint is more obtusely pointed than that of *Xysticus bifasciatus*, and the one underneath is stronger and of a more irregular form.

The palpal organs have two black spine-like processes near their centre, somewhat resembling those of *Xysticus bifasciatus*, but not nearly so long, and scarcely as strong.

The abdomen is oval, truncated in front, and projects greatly over the base of the cephalo-thorax. The upper side is of a deep rich red-brown colour, margined, but not very regularly, with yellow. The dentated band is (as in *Xysticus bifasciatus*) only traceable by a rather paler hue along the middle of the abdomen, and two short transverse yellow streaks on each side of the hinder part, followed by an irregular yellow marking above the marginal border at the posterior extremity. The upper side is also divided longitudinally by an indistinct pale reddish-brown streak. The sides and under sides are of a duller and less deep colour than the upper side.

The female is known to me only from Swedish examples, it is much larger than the male, of a dark-brown colour, with a similar pattern, though much less distinct.

One example only has yet been recorded as British. This one (an adult male) was found on Bloxworth Heath, in May, 1854. It appears therefore to be exceedingly rare. It was mistaken during several years for an unusually bright coloured example of *Xysticus bifasciatus*. Mr. Blackwall afterwards considered it to be the male of the spider which he had before described as *Thomisus Cambridgii* more recently, however, I have been enabled to compare it with types of *Xysticus luctator*, L. Koch., received from Sweden, and can find no difference whatever from that species.

GENUS *OXYPTILA*, *Sim.* *THOMISUS*, *Blackw.*, in part,
and *XYSTICUS*, *Cambr.*, in part.

The genus *Oxyptila* has been founded by M. Simon for the reception of a number of small *Thomisides*, hitherto usually included in the foregoing genus (*Xysticus*), but which have always formed a very compact group within it.

The distinctions on which the separation of these species from *Xysticus* has been made did not at one time appear to me sufficiently strong to warrant the formation of a new genus; on a further and more extended examination however of all the species known to me, I think that *Oxyptila* is both a tenable, and a very useful genus, reducing the numbers of the, still large, group *Xysticus*, and rendering its generic limits more precise.

The main differences between *Oxyptila* and *Xysticus* appear to be *first* the narrower fore part of the caput, the lateral margins of which are more compressed; *secondly*, the position of the eyes—the posterior row being more strongly curved, and its two central eyes nearer together than each is to the lateral eye next to it, while in *Xysticus* the two centrals are either further apart than from the laterals, or else the four are equidistant from each other. The four central eyes, also, instead of forming a square, or a quadrangle broader than long as in *Xysticus*, form in *Oxyptila* a quadrangle longer than broad. The abdomen of the male appears to be always more nearly of the size and form of that of the female; and the dentated band along the middle, so conspicuous in most, and traceable more or less in all true *Xystici*, is never discernible so far as I am aware (excepting occasionally in the female of *Xysticus horticola*, C. L. Koch., *Thomisus versutus*, Bl.) in *Oxyptila*, which has however a characteristic abdominal pattern of its own, consisting of an elongate central marking running backwards from the middle of the fore margin, of a fusiform shape, often indicated only by a dark marginal line, sometimes perfect, but frequently broken and interrupted; this fusiform marking is followed by several, more or less perfect, transverse, dark or light-coloured bars or stripes, often by both.

Sometimes these bars are slightly curved, at other times straight.

The spiders of this group are not found upon plants, shrubs, and trees, like many of the *Xystici*, but usually under stones at the roots of plants and herbage, and among moss, as well as running on the ground. Nor are the males so active. Of one species however *Oxyptila atomaria*, Panz., the males wander about, when adult, on bare spots, paths, and roadsides, and run pretty swiftly. Some of the spiders of this genus are clothed with curious-looking, bristly hairs, clubbed, or incrassated, at the extremity.

Six species are at present known as British, and all of them have been found in Dorsetshire.

OXYPTILA PRATICOLA.

XYSTICUS PRATICOLA, C. L. Koch., Die Arachn. iv. p. 77, Tab. 130, fig. 300, 301.

THOMISUS INCERTUS, Blackw., Spid. Great Brit. and Irel., p. 86, pl. iv., fig. 51.

The male measures $1\frac{1}{2}$ line in length, and the female 2 lines.

The sides of the cephalo-thorax of the male are reddish yellow-brown; in some examples the dark patches near the margin form a tolerably regular broadish band, always however broken by pale transverse lines corresponding with the normal thoracic indentations; the margins are whitish. The central longitudinal band tapers a good deal towards its posterior extremity, it is of a pale reddish yellow-brown colour, and has the usual central marking behind the eyes, though not as distinct as in *Xysticus*. This marking is of a rather darker colour than the band, marked and mottled with dark brown; it is bluntish pointed behind, but often continued backwards for a little way in a linear form. The space immediately behind it is of a brownish cream colour, brighter and more conspicuous in some examples than in others.

The legs are pale brownish-yellow, marbled and marked with deep reddish-brown and white, mostly so on the upper sides of the femora and genua, but only towards the upper extremity of those of the third and fourth pairs. The spines beneath the metatarsi of the first two pairs are rather long and strong.

The palpi are strong; the humeral joint is deep brownish-black; the cubital and radial joints are reddish yellow-brown, mottled with a deeper hue; the radial joint has its outer extremity produced into a long, black, somewhat tapering, sinuously curved apophysis, which is blunt-pointed, and directed downwards; and its under side has a strong one of a crescent or bifid shape. The digital joint is rather large and of a brownish colour; the palpal organs are compact and not very complex.

The sternum is yellow-brown, mottled with white, and has a marginal row of black blotches, with a black streak (often of an arrow-headed shape) running from the hinder extremity to the middle. These sternal markings are characteristic, and usually very distinct.

The abdomen is very short, broad-oval, truncated before, broader and rounded behind. The upper side is yellow-brown marked and spotted with black-brown, and spotted with white round the margins and on the sides, which last are also spotted with blackish. Although the characteristic pattern is usually indistinct, yet in some examples there is a tolerably well defined, longitudinal, tapering, blunt-pointed marking on the fore half, indicated by broken black-brown marginal spots and marks; and on the hinder half is a series of several transverse, very slightly curved, black-brown bars.

The female is usually paler-coloured than the male, but is often more regularly and distinctly marked.

This spider occurs in spring and summer time among moss and dead leaves, as well as at the roots of coarse grass, and other herbage, growing at the bases of trees at Bloxworth, but is rather rare. I have also found it near Sherborne, and received it from various other parts of England; and Mr. Blackwall (l.c.) records it both from Dorsetshire and Yorkshire.

It may be distinguished at a glance from all its British congeners by the markings on the sternum.

OXYPTILA BLACKWALLII.

OXYPTILA BLACKWALLII, *Sim.*, Arachn. de Franco, tom. ii., p. 231, pl. vii., fig. 22.

THOMISUS CLAVATUS, *Blackw.*, Spid. Great Brit. and Irel., p. 87, pl. iv., fig. 52.

The length of the male is $1\frac{1}{2}$ line, and the female is scarcely longer, but more robust.

This curious spider may be known at once from others of the genus, found in England, by the abdomen, as well as the fore part of the caput, being furnished with numerous short, strong, spine-like bristles, clavate (or clubbed) at their extremities.

The cephalo-thorax of the male is of a dark yellow-brown colour. The longitudinal band, and central marking behind the eyes are indistinct, but of a reddish yellow-brown hue, better defined in the female than in the male. The clavate bristles on the caput are longer than those on the abdomen, but are less incrassated at the extremities, which are of an oval form.

The legs are yellow-brown, the femora of the first and second pairs being much the darkest. Three spine-like bristles of a similar form to those on the caput form a short longitudinal line on the upper side of the femora of the first pair.

The palpi are short and somewhat like the legs in colour. The outer extremity of the radial joint is strongly produced and terminates in a longish prominent, tapering, curved, pointed, spine-like, apophysis, and its under side has a strong obtuse one indented at its extremity. The palpal organs are of simple structure.

The abdomen is short, round-oval, truncate before, broader and rounded behind. The upper side is of a reddish yellow-brown hue with numerous black markings; among these may be tolerably clearly traced, on the fore half, the longitudinal one, which is of a paler yellow-brown margined with black elongate spots and

on the hinder half a series of transverse curved black bars, each interrupted at the middle. The sides are rather paler than the upper part, spotted distinctly withk white and black spots. The form of the clavate spines on the upper side of the abdomen is that of a racquet bat.

Except in being rather larger the female does not differ from the male.

This spider occurs under stones and detached pieces of rock on the eastern side of the Isle of Portland, where, in the month of July, 1860, I found it in some abundance; though after a long search at the corresponding season in 1875 I did not succeed in finding a single example.

As it appears to be undoubtedly distinct from the spider described by Baron Walckenaer as *Thomisus clavatus*, Savigny. Mons. Simon has lately renamed it; conferring upon it the name of our veteran araneologist, Mr. John Blackwall.

OXYPTILA SANCTUARIA.

THOMISUS SANCTUARIUS, *Cambr.*, Trans. Linn. Soc. xxvii., p. 405, pl. liv., No. 8.

The male measures in length 1 to $1\frac{1}{4}$ lines.

This species is allied to *Oxyptila Blackwallii*, Sim., but differs from it in colours and markings, in the form of the radial joints of the palpi, and in the less clavate form of the spine-like bristles on the abdomen. The sides of the cephalo-thorax (which is very strongly compressed on the lateral margins of the caput) are of a deep brownish-black hue, mottled and marked with reddish yellow-brown. The longitudinal band is of a dull reddish-yellow colour and encroaches on the sides, at its hinder part. The central marking behind the eyes is short, brown-black, divided longitudinally by a paler line, cleft or bifid before, and its posterior, obtusely-angular, pointed extremity is continued to, or beyond, the thoracic junction by a distinct blackish line. The caput has a few strong, slightly clavate, spiny bristles on its fore part. The legs are of a dull darkish yellow-brown

hue, the femora of the first two pairs being brown-black, and those of the last two rather paler; on the upper sides of the femora of the first pair are two, widely separated, strongish, blunt-pointed spines.

The palpi are yellow-brown, the digital joint darkest; the radial joint has its outer side produced into a strong obtuse apophysis, and its under side has one less strong, but curved, and prominent. The digital joint is not very large; its form is very short, or round-oval, slightly pointed before. The palpal organs are not very complex; towards their hinder part are one or two strongish, prominent, pointed processes.

The abdomen is similar in form to that of *Oxyptila Blackwallii*. It is of a reddish yellow-brown colour above, sparingly marked with blackish-brown, and with some white markings at the fore extremity, and on the lateral margins. The normal fusiform marking along the middle of the fore-half is dull brownish-yellow, with dark-brown, diffused margins; and on the hinder part are some transverse, brown, slightly-curved bars of which the anterior one is the most strongly defined, and sometimes the only one at all distinctly traceable. The clavate spino-like bristles on the upper side are not nearly so strong nor so clubbed at the extremities as those of *Oxyptila Blackwallii*.

The female is unknown to me.

Four examples of the male have occurred at intervals since 1869 at Bloxworth, crawling on the walls of Bloxworth Church, and Rectory, in the months of August and September; and several examples were met with, running on the ground, on the 7th of September, 1878. I have also received it from Mr. C. W. Dale, by whom it was found near Warcham.

OXYPTILA TRUX.

THOMISUS TRUX, *Blackw.*, Spid. Great Brit. and Irel., p. 84, pl. iv., fig. 50.

The length of the male is about 1-7th of an inch, and that of the female 1-6th, and sometimes rather more.

The cephalo-thorax of the male has a broad, longitudinal, black-brown band on each side of the central one, with a narrower marginal band of the same colour, the intervening spaces, as well as the hinder part of the thorax, being of a yellowish-red hue. The normal central marking behind the eyes is indistinct, of a red-brown colour, and often considerably encroached upon by the dark bands on each side of it. Behind it the central band is of a creamy yellow.

The legs are of a yellow-brown colour, and unspotted; the femora, however, of the first, and half of those of the second pairs are blackish, as also is a portion of the fore extremity of those of the third and fourth pairs.

The humeral joints of the palpi are black, the cubitals pale yellow-brown, and the digital and radial joints dark brown; the latter has its outer extremity strongly and obtusely produced, terminating in a somewhat spine-like pointed apophysis, bent at its base, where it springs from the produced part of the joint; underneath the joint is another obtuse apophysis which has a process at its base. The palpal organs are not very complex; they have one or two prominent points near the middle, and are encircled by a pointed spine.

The abdomen is similar in form to that of the last species; its upper side is yellow-brown, marked with white, brown, and deep blackish red-brown, and margined with white. The normal central, longitudinal stripe on the fore part is white, margined with brown, and followed by several transverse, slightly-curved bars, alternately brown (or blackish) and white, their extremities being the darkest. The sides are marked with a broken, black, longitudinal band, and the under side is brown. The colours of the abdomen vary considerably in their depth and exact distribution; always, however, presenting a prettily variegated appearance.

The female resembles the male, excepting in being generally of a lighter hue.

This is a rare spider, but it occurs occasionally at Bloxworth in situations similar to that in which *Oxyptila praticola* is found, as well as on low plants in woods; it has also occurred in North

Wales, and I have received examples of it from Scotland. The form of the radial joint of the male palpus renders that sex easily distinguishable from the males of the next two species, to both of which it is nearly allied.

OXYPTILA ATOMARIA.

ARANEAE ATOMARIA, *Panzer*, Faun. Ins. Germ. 74, 19.

THOMISUS VERSUTUS, *Blackw.*, Spid. Great Brit. and Irel., p. 83, pl. iv., fig. 49.

THOMISUS PALLIDUS, *Blackw.*, l.c., p. 82, pl. iv., fig. 48.

XYSTICUS HORTICOLA, *C. L. Koch.*, Die Arachn. iv., p. 74, Tab. cxxix., fig. 296-298.

THOMISUS PALLIDUS, *Cambr.*, Trans. Linn. Soc., xxvii., p. 408, pl. 54, No. 10.

XYSTICUS VERSUTUS, *Blackw.*; *Cambr.*, Ann. and Mag. N.H., Feb., 1878, p. 121.

The length of the male varies from $1\frac{1}{2}$ to 2 lines, and that of the female from $2\frac{1}{2}$ to $2\frac{3}{4}$.

This spider is nearly allied to *Oxyptila trux*, *Blackw.* It is, however, less richly coloured, and varies from its darkest hues to an almost unicolorous yellowish abdomen, mottled slightly with white, and marked with a few blackish spots (var. *Thomisus pallidus*, *Blackw.*). It may also be distinguished (in the darker varieties) from *Oxyptila trux*, by the marginal black border of the cephalo-thorax being broader, and the fore part of the space between it and the upper black band being generally marked with black towards its fore extremity. The marginal black border is, however, often very fragmentary, and, in the pale examples, is altogether wanting. The upper side of the abdomen is less distinctly variegated than that of *Oxyptila trux*, though marked with very similar colours, and there are generally visible a few black spots close to the marginal white border. In the palest variety some of these marginal black spots, with one or two others, are all the dark markings visible.

The legs also differ from those of *Oxyptila trux*, being of a yellow-red hue, slightly marked with red-brown.

The palpi, excepting the digital joint, which is dark brown, are of the same colour as the legs. The radial joint has its extremity, on the outer side, produced into a very remarkable, trifid apophysis; the portion next to the digital joint is bifid or somewhat crescent-shaped, and is not at first easily seen; the outer, or most prominent, portion terminates with a short, black, obtuse, spiny projection; this projection, when simply looked at from behind, appears to be small and sharp-pointed, but when carefully noted from other points of view it is seen to be of almost uniform size throughout, and obtuse; underneath the radial joint is also another strong curved apophysis. The palpal organs are moderately complex.

The female varies in its colours like the male, but is always lighter in hue. On the abdomen is often a pale dentated band, like that of *Xysticus*, bordered with a deeper colour. Among numerous males, however, I have never seen any, at all distinct, trace of this band, excepting in one instance, where it was only faintly visible, and of a pale red-brown colour mottled with yellowish, and speckled with white points, being also bordered with darker red-brown, and containing, along the middle of the fore part, the normal dark stripe, which is indicated by broken blackish marginal lines only.

The varied colouring of the different varieties, as well as the different appearance of the outermost radial apophysis from different points of view, have caused this spider to be described as several distinct species under different names (*vide* synonyms given above). That *Xysticus horticola*, C. L. Koch., and *Thomisus versutus*, Black., are identical I feel no doubt, having compared examples of the former received from Dr. Koch., with types of the latter named by Mr. Blackwall himself. Dr. Thorell is, however, still of opinion that there are two species involved (Syn. Europ. Spid., p. 252), viz., *Xysticus horticola*, C. L. Koch., and *Xysticus atomaria*, Panzer (*Thomisus versutus*, Blackw.). This is not a very rare, though at the same time it is by no

means a common, spider. It occurs in similar situations with *Oxyptila trux*, as well as at the roots of heather; the adult male is sometimes found running on roads and paths through heaths and meadows at Bloxworth in May and June, and Mr. Dale has found it at Glanvilles Wootton. I have also received it from other parts of England, as well as from North Wales and Scotland.

OXYPTILA SIMPLEX.

THOMISUS SIMPLEX, *Cambr.*, Zoologist 1862, p. 7951.

XYSTICUS FUSIO, *Thorell*, Syn. Europ. Spid., p. 256 (1873).

The length of the male varies from 1-8th to 1-7th of an inch, and the female is rather larger.

This spider is nearly allied to both *Oxyptila atomaria*, Panz., and *Oxyptila trux*, Blackw., though perhaps most nearly to the latter. It may, however, be easily distinguished not only by its usually paler and plainer colours, but (in the male sex) by the structure of the radial joint of the palpus. The dark varieties are less frequent than the light coloured ones. The cephalo-thorax, in the darkest male I have seen, is of a deep, slightly reddish-brown colour, very faintly veined with yellowish, the longitudinal band, as well as the central marking, being traceable only by means of a bright, yellowish, triangular patch (the vertex of which is directed backwards) near the hinder part, strongly notched in front, and indicating the posterior extremity of the central marking; in some examples there are, on each side of the cephalo-thorax, two dark longitudinal bands, and an intermediate paler one, like those of *Oxyptila atomaria*; while more frequently one or both of these bands are scarcely traceable, the whole being of a pale yellowish-brown hue, and the central band whitish on the hinder part.

The legs are dull brownish-yellow, with the femora of the first and second pairs (in dark examples) strongly suffused with smoky black.

The palpi are like the legs in colour, the digital joint being

brown. The outer extremity of the radial joint is strongly and obtusely produced, terminating with a longish, rather fine, nearly straight, pointed, black, spine-like process, directed alongside of, but not quite close to, the digital joint. The palpal organs are simple, and encircled by a black marginal spine.

The abdomen is of a dull brownish-yellow hue, obscurely freckled with brown and dull cream-yellow. The margins of the upper side, especially in front, are mottled with white. The fusiform band or stripe on the fore half is indicated by two fine dark-brown longitudinal lines, which meet to form an acute angle at its hinder extremity; in dark examples this stripe is yellow-brown, in some very pale ones it is not visible at all; this latter may also be said of several transverse dark lines or bars on the hinder half of the abdomen, varying as these bars do, from being tolerably perfect, to mere blackish spots, which represent their extremities; in the darkest examples these transverse lines are margined, posteriorly, with white.

The female is always very pale coloured, and seldom shows more than very faintly the markings observed in the male.

This spider has, as yet, occurred (in Britain) only on iron railings, and among grass and dead leaves, at the bases of large trees on the lawn at Bloxworth Rectory. In these situations I have found it frequently in the months of May and June.

GENUS *PHILODROMUS*, *Walck., Thor.*—*PHILODROMUS*,
Blackw. (in part).

The spiders of this genus are distinguished from the foregoing genera of the present family, by the smaller and almost uniform size of the eyes, which are placed in a smaller group of a more exact crescent shape, the foremost row being much the shortest.

The cephalo-thorax is more pointed in front, less compressed on the lateral margins of the caput, which is also very short, while the thorax is large and almost round. Altogether the breadth of the cephalo-thorax is greater than its length.

The legs are long and slender; their relative length is 2.1.4.3., or 2.1.3.4., but the difference between those of the first-second

and third-fourth pairs is much less than in either of the foregoing genera of this family, and the spines with which the legs are armed are fine, though tolerably numerous.

The abdomen is, in males, generally elongate-oval, truncated before; in females, and in some males, it is broader towards the hinder part, when it is often sub-angular on the sides, and also pointed behind. Both the abdomen and cephalo-thorax are usually clothed with hairy pubescence.

Eleven species are at present recorded as indigenous to Britain; and, of these, seven have been found in Dorsetshire. They are exceedingly agile, running with great swiftness in all directions, and are found on low plants, bushes, and trees.

PHILODROMUS MARGARITATUS.

ARANEUS MARGARITATUS, *Clerck.*, p. 130, pl. vi., tab. iii.

PHILODROMUS PALLIDUS, *Blackw.*, *Spid.* Great Brit. and Irel., p. 93, pl. v., fig. 56.

„ *AMBIGUUS*, *Ibid.*, *Ann. Mag. N. H.*, September, 1867.

„ *JEJUNUS*, *Panzer.*, *Cambr.*, *Zoologist*, 1863, p. 8597, and *Trans. Linn. Soc.* xxviii., p. 437.

The length of the male is 1-5th, and that of the female 1-4th of an inch.

This is an exceedingly variable spider in its markings, but its larger size and mixture of grey and black colouring (the more common varieties also tinged with greenish) render it easily distinguishable from all our other known British species.

The whole spider is of a flattened form. The cephalo-thorax is of the ordinary type. In the male it is grey, more or less mixed with dark-brown and yellow-brown. A faint indication of a broad, longitudinal, central, slightly paler, or sometimes darker, band is occasionally visible.

The legs are very long, of a yellowish-grey colour, marked with deep brown and black spots, and imperfect annuli, with a strong black stripe in front, of at least the basal half, of the

femora of the first (and sometimes also of the second and third) pairs.

The palpi are rather long, and similar, in general colouring, to the legs; the cubital and radial joints are about equal in length; the latter is rather less strong than the former, and has a short, obtusely pointed, bifid apophysis at the extremity of the outer side. The digital joint is large, of a short, broad-oval form, pointed at the end; the palpal organs are not very complex, nor furnished with any very remarkable processes.

The abdomen is truncated and indented before, broader behind, but pointed at the spinners; it is of a greenish-yellow grey colour, variously mixed with brown and black. Some transverse, black, angular bars are sometimes visible on the hinder part, with one or two short, oblique, black markings on the sides of that part.

Examples of the above type are found, not uncommonly, on Scotch fir trees, near Bloxworth, where they assimilate very exactly to the greenish-grey lichens growing upon them; but upon apple trees, in the Rectory orchard, these typical examples are replaced by the very distinct and remarkable variety, *Phitodromus jejunus*, Panz., (pl. v., fig. 2), in which the cephalo-thorax and abdomen are of a clear, greyish-white, the former having an irregular, jet black patch on each side of the ocular area, and a more or less large one, of the same colour, on each side of the thorax. The abdomen has also a few patches of the same colour on the upper part and sides. The legs and palpi are pale, cream-grey, marked and annulated with black. This variety also corresponds most exactly with the lichens on the apple trees, which are of quite a different character from those of the Scotch fir. As yet, I have not found the two varieties, above described, in the same situation, each appearing to belong exclusively to the trees which foster the lichens similar to it.

It is adult in May and June; the females do not differ from the males excepting in size, and in having shorter legs. I have received examples of the variety *Phitodromus jejunus* from Mr. C. W. Dale, by whom they were found (also on apple trees) at

Glanvilles Wootton. The ordinary type has been met with in several other parts of England, and I have once received the variety *P. jejusus*, but I forget now the locality in which it was found.

PHILODROMUS DISPAR.

PHILODROMUS DISPAR, *Walck., Blackw., Spid.* Great Brit. and Irel., p. 91, pl. v., fig. 55. exclude reference to *Philodromus fallax* Sund.

The length of the male is about 1-5th of an inch, and that of the female very nearly 1-4th.

The sides of the cephalo-thorax of the male are dark dull yellowish-brown, often much paler towards the margins, which are yellowish-white. The central band is indistinct, with a short wedge-shaped marking close behind the eyes, darker than the rest, and sometimes followed by a stout, V-shaped, pale yellowish patch.

The legs are long, slender, and of a pale, dull, slightly greenish-yellow colour.

The palpi are moderately long and similar in colour to the legs, excepting the digital joint, which is black-brown, and affords a strong and characteristic contrast to the rest.

The radial joint is shorter and less strong than the cubital, and is very slightly and somewhat obtusely produced at the extremity of its outer side. The digital joint is large, of a broad-oval form, pointed at its extremity, and the palpal organs are simple in structure.

The abdomen is of a rather elongated-oval form, truncated and indented in the middle at its fore part. The upper side has the appearance of being of a uniform brownish-black colour when alive, rather paler on the sides of the fore part and in the middle of the hinder part. Some little time, however, after immersion in spirits of wine the colour becomes dark yellowish red-brown; and a longitudinal, central, darker marking is visible on the fore-half, followed by several pale angular lines. The margins also of the upper side are of a deeper hue than the rest, and form

an irregular surrounding band, broadest behind, and very distinctly defined on its outer edges. The sides are yellowish white, the latter thinly streaked or spotted with black-brown, and the under part is brown.

The female is much paler coloured than the male. The central band on the cephalo-thorax is better defined, and the abdomen is marked very much like that of the male, (as above described, when in spirits of wine), only of a lighter hue.

This is by no means a rare spider on low trees and bushes at Bloxworth and in the neighbourhood, and is adult in the months of May and June. It has also been found in many other parts of England and Wales.

PHILODROMUS AUREOLUS.

ARANEUS AUREOLUS, *Clerck.*, Sv. Spindl., p. 133, pl. vi., tab. 9.

PHILODROMUS AUREOLUS, *Blackw.*, Spid. Great Brit. and Irel., p. 99, pl. v., fig. 59.

The male measure 1-5th and the female 1-4th of an inch in length.

This spider is very similar to *Philodromus dispar*, Walck., in size and form, excepting that in the male the palpi are longer, the digital joints not so large, and the abdomen rather narrower. The colours of the two are, however, totally dissimilar.

The markings of the present spider are scarcely discernible in the living state, owing to the hairs with which it is clothed being pretty dense and reflecting a dull, rather greasy, metallic hue of a greenish and yellowish nature. When in spirits of wine, however, a tolerably distinct pattern comes out, not greatly unlike that of *Philodromus dispar*.

The cephalo-thorax is of a dull, reddish, yellow-brown colour on the sides, with a broad, central, longitudinal, brownish-yellow band, constricted at the occiput; within this band is a somewhat wedge-shaped, reddish-brown marking, whose posterior extremity is sometimes continued, as a single line, to the hinder part of thorax; but more commonly it does not reach the constriction,

and is often only represented by some red-brown lines behind the eyes.

The legs are long, slender, and of a pale, brownish yellow colour.

The palpi are long, and similar to the legs in colour, the digital joints being brown. The radial, and cubital joints are of about equal length; the former has a deep black-brown, tapering, pointed apophysis at its outer extremity, and underneath is another of a quadrate shape, but broader than long. The digital joint is large, of a rather irregular-oval form, slightly curved on its inner side, but considerably bulged on its outer side. The palpal organs are simple in structure, slightly prominent near the middle, and encircled at their fore margin by a black spine.

The abdomen is narrow-oval, truncated and slightly notched before, and gradually pointed behind. Along the middle of the fore-half is a tolerably distinct, red-brown, elongate marking, broadest in the middle, near which, on each side of it, is a small, red-brown spot. More or less of the fore-part, surrounding this marking, is of a clear, brownish (and sometimes whitish) yellow colour; the similar hue of the hinder-part being obscured by a reddish-brown suffusion, as well as by a series of transverse, angular, red-brown bars. The sides are reddish-brown, with several obscure, oblique, whitish-yellow markings, and the under side is brownish-yellow, with a broad, reddish-brown, longitudinal, central band.

The female is very similar to the male in its colours and markings, but these are usually more distinct; though both sexes are subject to considerable variations in the depth and distinctness of their colours and patterns, these being strongest in immature individuals.

This is a very abundant spider on low plants, bushes, and trees, at Bloxworth and in the neighbourhood, as well as in many other parts of Dorsetshire, especially on furze bushes when in bloom. I have also received it from various localities in England, and from Scotland. Its movements are exceedingly

rapid, and no spider is more difficult to catch with the fingers, owing to the great facility with which it is able to throw off the legs when seized by one or two only of them. It is adult in June and July.

PHILODROMUS CESPITICOLENS.

PHILODROMUS CESPITICOLIS, *Walck.*, Hist. Nat. d. Ns. Apt. I., p. 555.

„ CESPITICOLENS, *Blackw.*, Linn. Trans. xix., p. 123.

„ CESPITICOLIS, *Blackw.*, Spid. Great Brit. and Irel., p. 95, pl. v., fig. 58.

The spider so nearly resembles *Philodromus aureolus*, Clerck., in size, form, colours, and markings, that any detailed description would be a mere repetition of the description of that species. It will be, therefore, sufficient to remark that the male may be distinguished by the different form of the apophysis beneath the anterior extremity of the radial joint. In the present spider this apophysis is of an angular shape, as if the quadrato form of that of *Philodromus aureolus* had been altered by cutting away or sloping off its inner corner. There is also a small, obtuse, deep, red-brown prominence at the outer side of the base of this apophysis, which is not observable in *Philodromus aureolus*. The apophysis moreover at the outer extremity of the radial joint generally appears (to me) to be rather smaller and more acutely pointed than in that species.

With regard to the female of *Philodromus cespiticolens* I am quite unable to give any reliable characters by which it may be certainly distinguished from *Philodromus aureolus*.

Doubts are entertained as to the specific distinctness of these two species, by Dr. Thorell, who believes that many intermediate forms of the radial apophysis are to be found. I cannot, however, say that I have myself seen these intermediate forms among great numbers I have examined of both species.

Monsieur Eugène Simon includes both as varieties of one species; but Dr. Ludwig Koch. like myself, still adheres to the opinion that they are specifically distinct, though remarkably alike and nearly allied.

Philodromus cespitcolens is about equally abundant with *Philodromus aureolus*, and is found at the same season and in similar situations.

PHILODROMUS PRÆDATUS.

PHILODROMUS PRÆDATUS, *Cambr.*, Trans. Linn. Soc. xxvii., p. 409, pl. liv., No. 11 a.b.

This spider also resembles both the foregoing species so nearly that it is not easy to separate it, if mixed up with them, excepting by the form of the radial apophysis. In *Philodromus prædatus* the apophysis at the outer extremity of the radial joint is stronger and less acutely pointed than that of *Philodromus aureolus*, and is also rather curved or bent near its base; that underneath is somewhat sub-acutely conical in its form, and has a small, pointed, pale-coloured process within it on its outer side, with a small, deep red-brown, angular prominence at its base on the same side. The digital joint is also rather larger than that of *Philodromus aureolus* and *Philodromus cespitcolens*.

The dark marking behind the eyes, which is often in *Philodromus aureolus*, much abbreviated, is, in the present species, prolonged backwards, and gradually comes to a point towards the posterior extremity of the cephalo-thorax.

The female is unknown to me.

Three or four examples only have yet been found in England, and all of these have occurred on shrubs in the Bloxworth Rectory gardens.

M. Simon admits the specific distinctness of this spider, although the chief tangible characters as yet discovered for its distinction from the two foregoing species are scarcely stronger than those characters which separate them from each other.

PHILODROMUS CONSTELLATUS.

PHILODROMUS CONSTELLATUS, *Sim.*, *Arachn. de France*, tom II.,
p. 298.

Length of the female $3\frac{1}{2}$ lines.

Closely allied both to *Philodromus aureolus*, Clerck., and *P. cespiticolens*, Walek., but easily distinguished by the different marking of the cephalo-thorax; this is of a dark yellowish-brown on the sides, mottled with paler yellow-brown, and with narrow, but distinctly dentated, yellowish-white lateral margins. The caput is pale brownish-yellow, marked and clouded with a deeper hue, and at the thoracic junction is a large, stellate, brownish-yellow marking radiating from the thoracic indentation. The legs are brownish-yellow, marked, and indistinctly annulated, with dark reddish-brown, and with a pale yellowish spot at the upper extremities of the femora, genua and tibiae.

The abdomen is dull brown above, obscurely marked and suffused with whitish, and white irregular spots, on the sides and upper part; it is also thinly covered with minute black impressed points; the under side is dull whitish-grey, with a broad, central, longitudinal, darker band.

The sternum is dull yellowish.

An example of this species was found at Bloxworth, but, as it was overlooked at the time of capture among examples of *Philodromus aureolus*, I am not certain about the exact date, or season of the year.

PHILODROMUS EMARGINATUS.

PHILODROMUS EMARGINATUS, *Schrank.*, *Sim.*, *Arachn. de France*,
tom. II., p. 277.

Length of the male 2 lines; female 2 to $2\frac{1}{2}$.

Very similar in colours and markings to *Philodromus lineatipes* Cambr., to which it is closely allied. The cephalo-thorax, however, is in general distinctly radiated on the sides with converging dark lines or stripes on a pale ground; and the palpi,

although bearing a strong resemblance to those of that species, are rather different in the form of the larger limb of the radial apophysis; in the present spider this is very broad and dilated at the extremity, while in *Philodromus lineatipes*, it is, although obtuse, yet somewhat pointed. In the marking of the legs the two spiders bear close resemblance to each other.

A single female found at Bloxworth, several years ago, was, like the last, overlooked at the time of capture. Adults of both sexes have been sent to me from France.

A full description of *Philodromus lineatipes* will be found in the Appendix, among those British spiders not yet found in Dorsetshire.

PHILODROMUS ELEGANS.

PHILODROMUS ELEGANS, *Blackw.*, Spid. Great Brit. and Irel., p. 94, pl. v., fig. 57.

The female measures $\frac{1}{4}$ th of an inch, or 3 lines, in length.

The general appearance of this spider is much like that of an unusually distinctly-marked and handsome example of *Philodromus aureolus*.

The cephalo-thorax is of a pale yellowish colour. The sides have each a broad, longitudinal, dark yellowish red-brown band, leaving a narrow marginal, and a broad central, yellowish one; the latter is constricted at the occiput, and bisected longitudinally, by a red-brown stripe, dilated in the middle and narrowest in front.

The legs are long, moderately strong, and of a yellowish-brown colour, annulated with redbrown.

The abdomen is indented in the middle of its fore margin, and projects over the base of the cephalo-thorax. It has a broad, but not well defined, brownish-yellow, tapering band along the middle of the upper side; on the fore half of this band is an elongated red-brown marking, edged with deeper red-brown, broadest, and with an angular point on each side, near the middle, and terminating in a fine point more than half way towards the spinners; on the hinder part of the abdomen is a series of short,

alternately red-brown, and white angular bars, ending just above the spinners with a red-brown, elongate, triangular patch. The sides are red-brown, palest along the middle, and ornamented with three oblique, conspicuous rows of cream-white spots, several spots often become confluent, and form an elongated blotch or marking. The under side is yellowish-white, speckled with minute, red-brown spots, and marked with three longitudinal, light reddish-brown bars.

This handsome spider was found on Bloxworth Heath, but very rarely, until the September, 1878, when it occurred there in abundance; Mr. C. W. Dale has also sent it to me from Glanvilles Wootton. The only other recorded English localities are Lyndhurst and Shirley Heaths, and at Wokingham; though, no doubt, it occurs on all the heath districts of the South of England. It has been sent to me from Scotland.

I have not yet succeeded in finding the male in the adult state; most of the examples met with have been females, not quite come to maturity.

PHILODROMUS FALLAX.

PHILODROMUS FALLAX, *Sund.*, Sv. Spindl. Beskr., Vet Akad Handl., f. 1832, p. 226.

„ DELETUS, *Cambr.*, Zool. for 1863, p. 8564.

The female measures nearly $\frac{1}{4}$ th of an inch in length.

This spider somewhat resembles the foregoing in the character of its markings, but may be distinguished easily by its broader, flatter form, and pale, dull greyish straw-yellow colour. The abdomen also projects more over the base of the cephalo-thorax. The spider has, in fact, a washed-out appearance, as though bleached by the sun.

The cephalo-thorax has a short, longitudinal, brown band, on each side of the thoracic portion, strongly emarginate on the outer edge, the intervals between the prominent points being of a whitish hue.

The central, longitudinal, pale brown marking, on the fore part

of the upper side of the abdomen, is pointed behind, and has two angular points on each side, being also indistinctly edged with dull yellowish. The rest of the upper part and sides is pale dull brownish-yellow, or drab coloured, the latter having several oblique rows of more or less distinctly-marked pale yellowish-white spots.

The legs are very similar in colour to the cephalo-thorax, thinly and irregularly marked with dark yellowish-brown spots and blotches. The spines on the legs are short and very fine.

This spider is found, though rather rarely, on the Sandhills along the coast from Poole to Christchurch, and is a very striking instance of adaptation of colouring to the surrounding surface. When at rest, with its legs extended on the sand, it is almost impossible to detect it. Its movements consist of short and rapid runs. On the 6th of June, 1879, I met with an adult female on a sandy part of the Chesil Beach, Portland, near the Ferry Bridge.

I have not yet succeeded in finding the male.

GENUS *THANATUS*, *C. L. Koch*. *PHILODROMUS*, *Blackw.*
(in part). *THANATUS*, *Cambr.* (in part).

This genus differs from *Philodromus* in the relative size and position of the eyes; those of the anterior row being closer together (thus separating rather more the eyes of each lateral pair), and the external ones of this row being perceptibly larger than the two middle ones. The legs are shorter, stronger, and differ from *Philodromus* in their relative length, which is 4.2.1.3. Those of the first and third pairs are sometimes equal, and, but very seldom, those of the fourth and second. The tarsi and metatarsi are furnished underneath with a scopula, or brush of short, numerous hairs.

The spiders of this genus are seldom found upon shrubs, plants, and trees, like the *Philodromi*, but most commonly upon the ground, and at the bases of plants and herbage; nor are they so swift in their movements. One species only has as yet been found in Britain, and that one was first found in Dorsetshire.

THANATUS HIRSUTUS.

PHILODROMUS HIRSUTUS, *Cambr.*, Zool. 1863, p. 8565.

THANATUS HIRSUTUS, *Ibid*, Ann and Mag., N. II., February, 1878, p. 123, and Trans. Linn. Soc. xxvii., p. 438.

The length of the female is about 2 lines, and that of the male rather more than $1\frac{1}{2}$.

The colour of the cephalo-thorax is a dull, brownish-yellow, with three longitudinal, blackish-brown bands. The middle one begins at (and includes) the hind-central pair of eyes, tapering to a point at the hinder extremity. The lateral bands are broader, and have a marginal, yellowish one of nearly equal breadth. The surface of the cephalo-thorax is thinly furnished with long, strongish, nearly erect bristles.

The legs are moderately long, rather robust, a little paler in colour than the cephalo-thorax, and furnished with bristly hairs and fine spines; beneath the tarsi and metatarsi is a *scopula*, or brush-like arrangement of papillæ-form hairs.

The abdomen is oval, truncated before, and blunt-pointed behind. It is of a whiter-yellowish hue than the cephalo-thorax, and, like that part, has the surface furnished with long, erect, black bristles. On the upper side are five dark-brown, longitudinal stripes, or narrow bands, mostly formed by more or less confluent spots and blotches. The central band is of a much elongated or drawn-out, diamond shape, and terminates in a fine point, half-way to the spinners, followed, however, by one or two isolated dark-brown spots. Beginning on either side of the end of the central band are two others, which converge to a point above the spinners; and on each side of the anterior margin of the abdomen is another which forms a more or less strongly marked and continuous border to the upper side.

On the under side are three longitudinal, brown bands, of which the laterals are much the blackest, and converge towards the spinners, where they are connected by a transverse stripe of the same colour.

The male differs from the female, in being of a much darker

hue. The abdomen is suffused with a sooty-grey colour, considerably obscuring the longitudinal characteristic stripes. The legs are longer, and also of a sooty-brown colour. The palpi are like the legs in colour, and short; the radial and cubital joints particularly so, the former is slightly the shortest, and does not appear (so far as I can make out) to have any external apophysis. The digital joint is of a narrow-oval form, and is longer than the radial and cubital joints together. The palpal organs are simple in structure, and have a small, prominent, corneous process near their fore extremity.

Found (but rarely) at Bloxworth—one on a gato post in the village, in June, 1862; others on the ground among grass and low plants. I have also found it among the star grass on the Sandhills, by the seaside at Studland; here it was that in June, 1877, I first met with the adult male. Numbers of immature examples of both sexes were sent to me in 1866 from Wicken Fen, Cambridgeshire, where it appears to be abundant. It is very nearly allied to, and, perhaps, identical with, *Thanatus striatus*, C. L. Koch, of which, however, the male has not yet been described.

GENUS TIBELLUS, *Simon*. PHILODROMUS, *Blackw.*, in part, and THANATUS, *Cambr.*, in part.

This genus differs from *Thanatus* in its, generally, elongated form. The cephalo-thorax is always longer than broad, whereas in *Thanatus* it is usually as broad as long; very seldom longer than broad. The abdomen of the present genus is especially long and narrow. The lateral eyes of the posterior row are also much further removed backwards than in *Thanatus*, being separated from the fore laterals by a very wide interval. The eyes of the anterior row, with those of the hind-central pair, form a small compact hexagonal group, from which the hind-lateral eyes are conspicuously removed. The fore-laterals are slightly larger than the fore-centrals, but the hind-laterals are the largest of the eight.

The spiders of this genus are usually found on coarse sedgy

grass and rushes in damp places, moors, and marshes. They are exceedingly active, and, when disturbed, run up the stems of grass or rushes with great rapidity, stretching out the four anterior legs forwards and the four posterior ones backwards along the stem, so that the spider becomes almost invisible, owing to its similarity in colouring to the plant.

One species only has as yet been found in England, and that one is frequent at Bloxworth and in the neighbourhood.

TIBELLUS OBLONGUS.

PHILODROMUS OBLONGUS, *Walck., Blackw., Spid. Great Brit. and Irel.*, p. 100, pl. v., fig. 60.

THANATUS OBLONGUS, *Cambr., Trans. Linn. Soc.* xxx., p. 331.

The length of the male is from 3 to $3\frac{1}{2}$, and of the female 4 to 5 lines.

The cephalo-thorax is of a pale brownish-yellow colour, and has three longitudinal dark-brown bands, a sub-marginal one on each side, and a central one. The latter tapers slightly to the hinder extremity, and is bisected longitudinally, through a considerable part of its length, by a yellowish line, beginning at the eyes. The legs are long (their relative length being 2. 4. 1. 3.) and rather slender. They are a little paler in colour than the cephalo-thorax, and minutely speckled with brown.

The *palpi* are short; the radial and cubital joints of equal length; the former without any apophysis at its extremity. The digital joint is not large, it is oval, broadest near its base, and obtusely pointed at its extremity. The palpal organs are moderately prominent, simple in structure, and have a small, straight, slightly oblique, bluntish-pointed, black spine, directed forwards at their extremity.

The *abdomen* is long, narrow, slightly tapering to its hinder extremity, and fits well up to the steep hinder slope of the cephalo-thorax. It is of a dull yellowish-white colour, bisected longitudinally, on the upper side, by a dark-brown, tapering, rather narrow band; on each side, at the margins of the

upper part, is another band, narrower and paler than the central one; and a little way from the hinder extremity, on each side, is also a small, deep red-brown spot. A pretty variety occurs occasionally, in which the central band has its edges spotted with a line of small, deep, reddish brown spots, and on each side of it are two or three other longitudinal lines of similar spots.

The female resembles the male in colours and markings.

Not rare at Bloxworth and the neighbourhood among sedge, grass, and rushes in marshy spots. I have also met with it frequently in Lancashire, and have received it from Norfolk and Cambridgeshire, as well as from Scotland.

GENUS MICROMMATA, *Latr.* SPARASSUS, *Walck.*, in part., and *Blackw.*, in part.

Cephalo-thorax, longer than broad, and strongly constricted on the lateral margins of the caput.

Maxillæ, moderately long, strong, straight, and rather rounded at their extremities.

Labium, short, semicircular.

Legs, tolerably long, rather strong, armed with longish spines. Their relative length is 4. 2. 1. 3. The tarsi and metatarsi are furnished underneath with a strong scopula, as well a compact claw-tuft at the extremity of the former.

Eyes, small, placed on minute, separate tubercles, forming a regular sector of a circle. The convexity of the curve in both rows is directed away from each other. The fore-laterals are rather larger than the fore-centrals, the intervals being equal. The interval between the hind-centrals is greater than that between each and the hind-lateral eye next to it.

It will be easily seen from the above characters that this genus departs considerably from the foregoing genera of the family *Thomisides*, differing from them all, not only in the relative length of the legs and the curve of the hinder row of eyes, but in the form of the maxillæ, which in all the other genera are rather long, narrow, and inclined, more or less strongly, towards the *Labium*, which last also, in them, is somewhat pointed at its apex. The

spiders of the present genus, in thus departing from the *Thomisides*, appear to approach more nearly to the *Drassides*, far removed though they are from the latter, in our systematic linear arrangement.

One species only has been found in Great Britain, and is met with, though not commonly, in Dorsetshire.

MICROMMATA VIRESCENS.

ARANEUS VIRESCENS, *Clerck.*, Sv. Spindl., p. 138, pl. vi., Tab. 3.

„ ROSEUS, *Ibid.*, l.c., p. 137, pl. vi., Tab. 7.

SPARASSUS SMARAGDULUS, *Walck.*, *Blackw.*, Spid. Great Brit. and Irel., p. 112, pl. v., fig. 61.

The length of the male is 4 lines, and that of the female 6 to 6½.

The cephalo-thorax of the male is of a greenish-yellow hue, clothed with hairs, and the thoracic indentation is long and deep. The *legs* are greenish-yellow, and sometimes of a bright green. The spines beneath the tibiæ and metatarsi are long and tolerably strong.

The *palpi* are of moderate length, and similar to the legs in colour. The radial is rather longer than the cubital joint, and has its outer extremity produced into a long, prominent, slightly curved, tapering, pointed, black-brown, apophysis, equalling the joint in length. The digital joint is large, oval, pointed at its extremity, and of a brown colour, equal in length to the radial and cubital joints together. The palpal organs are prominent, rather complex, with a curved, pointed spine at their extremity.

The *abdomen* is of a narrow, somewhat cylindrical, oval form; its upper side is brightish-yellow, with three longitudinal, vivid scarlet bands, of which the central one tapers to a point above the spinners. The sides and under part are of a dull green.

The female is wholly of a brightish green hue, her abdomen is much larger, and of a more oval shape than that of the male, and is rather paler than the cephalo-thorax, with a tapering,

pointed band, of a deeper green colour, along the middle of the fore half. The genital aperture is large, and of a glossy, dark (nearly black) hue.

This spider, which is perhaps the most showy of all our larger indigenous species, is found, but not commonly, in woods at Bloxworth, and in the neighbourhood; it is usually met with running in bright sunshine, among plants and rough herbage in the more open spots. The adult male, with the contrast of its green, yellow, and scarlet colours, is at all times a very conspicuous object. The female, being wholly green, is not easily detected until she moves.

In the immature state the male usually resembles the female in colours, but a variety occasionally occurs in which the longitudinal, central abdominal band is edged with small scarlet spots, and the cephalo-thorax, also, is similarly ornamented: This variety has been recorded by Mr. Blackwall as *Sparassus ornatus*, Walck., a spider which (if it be distinct from *Micrommata virescens*) has not yet been found in England. The typical form is found also in various other parts of England, but the variety *ornatus*, Blackw., I have only myself met with at Drayton Beauchamp, near Tring, in Buckinghamshire.





FAMILY LYCOSIDES.

THE spiders of this family may be easily known by their usually elongate cephalo-thorax, which narrows gradually to the fore-extremity; its upper convexity is also considerable, the sides sloping, and the profile line of the caput and thorax, from the eyes to the posterior declivity, remarkably even and level. The cephalo-thorax, as well as the abdomen, is more or less densely clothed with hairs and hairy pubescence, upon which a good deal of the colours and markings depends. The legs are long and strong, always directed forwards and backwards, never laterally; and in some groups they are much attenuated at the extremities.

The spines are numerous, but not found on the tarsi, nor generally very strong.

The four eyes, which represent the posterior row in most other spider, are much the largest, and always form a large quadrangular figure on the upper side of the caput, while those of the anterior row are very much smaller, and form a short, straight, or slightly curved, transverse row near the base of the falces. It is usual, however, to refer to the eyes of the *Lycosides* as in three transverse rows, 4.2.2.

The maxillæ are strong, moderately long, straight, never inclined to the labium, which last is longer than broad, and obtusely truncated at its apex.

The spiders of this family spin no snare, but catch their prey either by leaping upon it suddenly, or sometimes by fairly running it down. They are very active, and are usually found on the surface of the ground, or at the base of herbage and low plants, though sometimes they may be found on furze bushes

when in bloom ; a few are semi-aquatic and able to continue for some time under water. Some species form cylindrical holes, of considerable depth in the earth, lining them with a slender lining of silk. The females bear their egg cocoons about with them, generally attached to the spinners. The female also carries her young, crowded upon the abdomen, for some days after they are hatched. The affection of the female for her egg-cocoon is so strong that if it be taken from her she will seize it in her fangs and carry it off again and again, if repeatedly deprived of it, though at last she will probably give it up in despair.

The division of the *Lycosides* into genera, satisfactorily and sharply characterized, is by no means easy, owing to their great similarity in many important points of structure. All those formerly known (excepting two or three) were included by the older araneologists in one genus—*Lycosa* ; but as the known species became more numerous some subdivision was felt to be necessary. The generic division I have followed here is chiefly that of Dr. Thorell. M. Simon and Dr. C. L. Koch have lately adopted a considerably different one, for which there is much to be said in its favour, though at present it does not appear to me to be entirely tenable ; not, however, having yet been able to study it sufficiently, I have (for the present at least) adhered to that adopted in 1874, Linn. Trans. xxx., p. 332, with a slight alteration only. According to the subdivision here adopted, six genera are found in England, all of them having representatives in Dorsetshire. These six genera comprise 34 species, of which, however, nearly half are included in one genus—*Lycosa*. Of the 34 species 25 are found in Dorsetshire.

Almost all *Lycosids* present a very characteristic pattern both on the cephalo-thorax and abdomen ; and by the differences and modifications of this pattern we can in most cases readily distinguish species which in other respects are remarkably similar to each other in general appearance. The pattern on the abdomen consists of an elongate, more or less narrow, oblong marking along the middle of the fore half, ending either in a

point, or obtusely (to this I have usually given here the name of "the *normal marking*"), and it is followed to the spinners by a series of, more or less well defined, angular, or curved transverse bars.

Another valuable specific character is furnished in most instances by the annulation or non-annulation of the legs, and, as in all other spiders, the palpi of the male and genital aperture of the female are exceedingly important in the determination of the species.

GENUS OCYALE, *Savigny*. DOLOMEDES, *Blackw.* in part.

The cephalo-thorax is very strongly constricted on the lateral margins of the caput, the fore part of which is truncated, and has its lower corners considerably expanded. The clypeus is high, and projects forwards. The eyes are small, the anterior row is slightly curved, the convexity of the curve directed forwards, and its lateral eyes are larger than the centrals. This row (like the corresponding row in all *Lycosids*) is seated on the more or less vertical face of the caput. The two middle eyes of the posterior row form in this and other genera the *second* or intermediate row. They are placed on the upper edge of the fore part of the caput, and form a much shorter line than the anterior row. The *third* row (formed by the two lateral eyes of the ordinary posterior row, but in this and other *Lycosid* genera called the *third* or *posterior* row) is the longest, and forms, with the second row, a quadrilateral figure whose transverse diameter is greater than its longitudinal one. The eyes of the third row are placed rather on the sides of the upper part of the caput. The intervals between the three rows of eyes is about equal. The legs are long, not very unequal, moderately strong; their relative length is 4.1.2.3., and there are spines on the femora, genua, tibiae, and metatarsi.

Abdomen rather narrow, elongate oval; spinners short.

The maxillæ are straight, moderately long, enlarged and somewhat rounded at their extremity.

The labium is scarcely half the length of the maxillæ, slightly broader than long, and truncate at its apex.

The spiders of this genus are few in number. One only has been found in Europe, and is common in Dorsetshire, as well as in most parts of England, North Wales, and in Scotland.

OCYALE MIRABILIS.

DOLOMEDES MIRABILIS, *Clerck., Blackw., Spid. Great Brit. and Irel., p. 37, pl. ii., fig. 18.*

The male measures from 4 to $5\frac{1}{2}$ lines in length, and the female from 6 to 8 lines.

The cephalo-thorax of the male is reddish-brown, clothed with yellowish hairs, and with a longitudinal, central, narrow, yellowish stripe, clothed with white hairs and often fining down to but little more than a fine streak near the eyes; from each of the fore-lateral eyes to the external anterior lower corners of the caput is a white band formed by white hairs; this band is broadest below, well defined on its fore edge, but diffused on its hinder one, and the triangular space included between the two bands is smooth and without hairs; a short, curved, whitish line also runs backwards from each eye of the posterior or third row; and there are also two longitudinal whitish, obscure, nearly parallel lines on each side near the margin. In some examples the space enclosed by these lines is also whitish from being covered with whitish hairs. The legs are yellow-brown, long, moderately strong, and not very unequal in length; those of the fourth pair are the longest.

The palpi are short, strong, and similar in colour to the legs, excepting the digital joint which is dark brown. The radial joint is rather shorter and less strong than the cubital. It has at its extremity on the outer side a strongish tapering apophysis, with a curved point, there is also a tuft of short hairs at its base. The digital joint is large, round-oval at its base, and produced into an elongated point at its extremity; its length considerably exceeds that of the radial and cubital joints together. The palpal organs are very prominent and moderately complex.

The abdomen is of a narrow oblong-oval form, and rather

densely clothed with a yellowish-brown pubescence. The upper part is bounded by a somewhat sinuous or obtusely dentated, longitudinal, marginal white band on each side, enclosing a broad, central band which presents a considerable difference in appearance owing to the variety of colouring in different examples; it is usually darkish yellow-brown along the sides, deepening to black-brown at some parts, paler along the middle in a somewhat tapering form, and containing the normal marking, which is darker, but generally indistinct; when visible this marking is narrow, pointed behind, and followed by some short, obscure, dark angular lines. The sides are brownish, and the under part paler, with sometimes three longitudinal parallel whitish stripes.

The female is generally lighter coloured, and less distinctly marked, but otherwise resembles the male in its colours and markings, also (like that sex) varying considerably in these respects. Most of the markings on the abdomen become more or less obscure or obsolete, and the abdomen itself much shrunken, after the eggs are deposited.

This is one of our finest spiders, and is abundant in woods and on wild commons and heaths, being also found throughout Great Britain. In June and July the female may be seen carrying about her large round egg cocoon beneath her, partly held up in the falcæ and palpi, and partly secured by some threads from the spinners. The cocoon is finally enclosed, among the herbage, or on low plants and bushes, in a somewhat dome-shaped maze of web, within which the young, when hatched, are safely enclosed until able to separate and sustain themselves.

GENUS DOLOMEDES, *Latr.* DOLOMEDES, *Blackw.* in part.

In this genus the spiders are of an altogether stouter build than those of *Ocyale*. The cephalo-thorax is far less constricted on the lateral margins of the caput; and the eyes are larger, though similar in position. Those of the middle row are much larger than the laterals of the anterior, and about equal to those of the third (or posterior) row. The *Maxillæ* are shorter, and wider at

their extremities. The *Labium* is slightly less broad than high, and rounded at its apex. The legs are also stronger than those of *Ocyale*; they are armed with stronger spines, and have a scopula beneath the tarsi and metatarsi. Their relative length is 4.2.1.3., but the actual difference is not great.

The spiders of the genus *Dolomedes*, are of large size and of semi-aquatic habits, being found in marshes and on the edges of streams, ponds, and lakes. They are able to run with facility on the surface of the water, as well as to dive down and remain beneath it for a considerable time.

One species only has been found in Britain, occurring also in Dorsetshire.

DOLOMEDES FIMBRIATUS.

DOLOMEDES FIMBRIATUS, *Walck., Blackw., Spid. Great Brit. and Irel., p. 40, pl. ii., fig. 20.*

„ ORNATUS, *Blackw., loc. cit. p. 39, pl. ii., fig. 19.*

The length of the male is from $4\frac{1}{2}$ to 6 lines, and that of the female 10 to 11 lines.

The cephalo-thorax of the male is deep brown, with a broad, longitudinal, pale, yellowish band on each side, not far from the margin, and clothed thickly with short white hairs.

The legs are long, strong (particularly the femora), and of a brownish-yellow colour, tinged with red.

The *palpi* are strong, moderately long, similar in colour to the legs (excepting the digital joint, which is dark brown), and armed with strongish spines. The radial joint is stronger than the cubital, and has a not very large, tapering, pointed, slightly curved apophysis at its extremity on the outer side, and a much larger one underneath; between these is a small, slightly curved, pointed, black, tooth-like spine. The digital joint is large, considerably dilated at its base on the inner side, and as long as the radial and cubital joints together. The palpal organs are rather complex, with a curved filiform spine at their extremity.

The abdomen is oval, rather truncated before, and obtusely pointed behind. The upper part is of a deep yellowish-brown colour, with a broad, longitudinal, marginal band on each side, clothed with short white pubescence. The normal marking is obscure, but of a pale yellow-brownish hue, pointed behind, and between it and the marginal white band, on each side, is a longitudinal row of small but vivid white spots. These are often obsolete, and generally so in the adult female. The sides are dark brown, and the under part is paler, with a rather obscure marginal stripe on each side, and two others along the middle, near together, and converging towards the spinners, which, however, they do not reach. Very young examples alone have the transverse bars visible on the hinder part of the abdomen, the white marginal bands being also indistinct; from such examples Mr. Blackwall described as a new species *Dolomedes ornatus*, loc. cit.

The female resembles the male in its markings, but it is, in the adult state, usually darker, and the white bands are less distinct.

This is one of our largest British spiders, and its dark brown hue, in contrast with the white longitudinal bands on the cephalo-thorax, and abdomen, render it one not easily mistaken. Immature examples of both sexes, as well as adult females, have been met with frequently in marshy spots on Bloxworth Heath, and in Morden Park, but I have never yet myself met with the adult male. The description above given of that sex has been made from examples kindly sent to me from Wokingham by the Rev. C. W. Penny. Towards the end of the summer the female takes her egg-cocoon to the top of a tuft of rushes or low bush (I have found it both on the sweetgale and on low rhododendrons), and there surrounds it with a maze of web within which the young are hatched, and, sitting on the outside, she carefully guards and tends the brood until large enough to disperse and shift for themselves.

Dolomedes fimbriatus is also met with in the Fens of Cambridge-shire, as well as in Scotland and Ireland.

GENUS PIRATA, *Sund.* LYCOSA, *Blackw.*, in part., and
 PIRATA, *Cambr.*, in part.

The cephalo-thorax is long, moderately constricted at the lower margins of the caput, which is broad and truncated at its fore extremity below, but rather narrow and rounded above; its hairy clothing is slight, and the *facies is nearly vertical.

The first and second rows of eyes are of equal length, the former being very small, of equal size, and separated from the lower margin of the clypeus by no more, or even less, than a diameter of one of its central eyes. The eyes of the second row are the largest of the eight, divided from each other by nearly about a diameter's space, and forming with those of the third (or posterior) row, a quadrangle much broader behind than in front. The length of the line formed by the lateral eyes of the second and third rows, on each side, is equal to that of the second row. The eyes of the third row are considerably larger than those of the first.

The legs are long and tolerably strong. The spines are rather slender, and there is no scopula beneath the tarsi.

The spinners of the superior pair are distinctly, but not greatly, longer than those of the inferior. M. Simon states them to be two-jointed; but it appears to me that he reckons as a joint the small fixed basal prominence to which the spinner is articulated.

The spiders of this genus are, like *Dolomedes*, semi-aquatic. They are usually of small or moderate size, and are all conspicuous from the two longitudinal rows of shining white dots, and often similarly coloured borderings, with which the abdomen is ornamented.

Five species have been recorded as British, four having been found in Dorsetshire.

* The facies is the front portion of the caput between its upper anterior margin and the falces,

PIRATA PISCATORIA.

ARANEUS PISCATORIUS, *Clerck.*, Sv. Spindl., p, 203, pl. v., tab. 5.

LYCOSA DE GREYII, *Camb.*, Trans. Linn. Soc. xxvii., p. 396,
pl. liv., No. 3.

Length of the male, $4\frac{1}{2}$ lines, and of the female, $5\frac{1}{2}$.

The cephalo-thorax is brownish-yellow, with a broad, dark, yellow-brown longitudinal band on each side. The central space thus left includes, at its forepart, a broad (but rather obscure), somewhat spear-headed, dark yellow-brown marking, with a deep black-brown point, directed backwards, and formed by the thoracic indentation; the marginal bands are thickly and conspicuously clothed with bright, silvery white hairs.

The legs are long, 4.1.2.3., moderately strong, brownish-yellow, the tibiae and metatarsi of the first two pairs strongly suffused with deep brown, tinged with reddish.

The palpi are similar to the legs in colour. The radial joint is considerably longer than the cubital, and curved. The digital joint is long and strong, of a pointed oval form, and equal in length to the radial and cubital joints together; its colour is deep blackish-brown tinged with red.

The abdomen is oval, somewhat truncate in front, broader and obtuse behind, and its general hue is dark yellow-brown, mottled obscurely with yellowish. On the fore part of the upper side is the normal band, not very large, of a clear brownish-yellow, very slightly enlarged laterally about the middle, and pointed at its hinder extremity; nearly parallel with which, on either side, is a conspicuous bright bluish-silvery dot, followed by several others of a similar nature at intervals towards the spinners, and forming two parallel rows. Some of these spots are more conspicuous than the rest, and above the spinners are some obscure, transverse, curved, yellowish lines. The sides are more or less clothed with bright bluish-silvery hairs. Some of these are concentrated, and form a short but conspicuous white band on either side of the fore extremity.

The sexes do not appear to differ much excepting in size.

This species is allied to *Pirata hygrophilus*, Thor., and *Pirata piraticus*, Clerck. The broad, white, marginal, thoracic bands, however, besides its larger size, distinguish it easily from both.

An adult male was kindly sent to me from Merton Hall, Norfolk, by Lord Walsingham some few years ago; and several adult females were met with in a swamp on Bloxworth Heath on the 15th August, 1879.

PIRATA HYGROPHILUS.

PIRATA HYGROPHILUS, Thor., Syn. Eur. Spid., p. 343.

LYCOSA PISCATORIA, Blackw., Spid. Great Brit. and Irel., p. 36, pl. ii., fig. 17.

Length of the male from $2\frac{1}{2}$ to rather over 3 lines, and of the female from 3 to $3\frac{1}{2}$ lines.

The cephalo-thorax is yellow-brown, with a broad, olive-brown, longitudinal band on each side, and a narrow marginal one of the same hue; immediately behind the eyes is an elongate, wedge-shaped, similarly-coloured marking, whose fine produced point is directed backwards, and the greater part of its length is bisected by a longitudinal yellow-brown line, or stripe, of greater or less strength. This wedge-shaped marking is common to all the species of the genus; it varies a little in its form and distinctness, and is a reliable specific character.

The legs are long, tolerably strong, of a yellow-brown colour, annulated with greenish, or olive-brown; the annulations are more distinct in some than in other examples, but perceptible in all.

The eyes of the anterior row are separated by equal intervals.

The palpi are rather long, and of a greenish yellow-brown hue, the digital joint being the darkest. The radial joint is a little longer than the cubital, and (like all the true Lycosids) devoid of any apophysis at its extremity. The digital joint is large, equalling in length that of the radial and cubital joints together, and the palpal organs are complex.

The abdomen is of a deep brown colour above and on the sides, and reddish yellow-brown along the middle of the fore half, which contains the normal marking. This is of an elongate, somewhat diamond-shape, defined by a strong, though rather irregular, dark brown marginal line. The hinder extremity is sharp pointed, and enclosed within the first of a series of broadish, angular, and in some examples triangular, or arrow-head-shaped, brownish-red bars, which diminish in size as they approach the spinners; along each side of these bars, at a little distance, is a longitudinal row of small, bright bluish white spots. The under side is yellow-brown. The sternum is dark-brown, bisected longitudinally by a brownish-yellow stripe.

The sexes differ but very little, excepting in size, being remarkably similar to each other both in colours and markings.

This spider is abundant among rushes and sedgy grasses in swamps at Bloxworth and in the neighbourhood, and is adult in June and July. I have also met with it at Glanvilles Wootton; and it has occurred in Buckinghamshire.

PIRATA PIRATICUS.

ARANEUS PIRATICUS, *Clerck.*, Sv., Spindl., p. 102, pl. v., tab. 4.

LYCOSA PIRATICA, *Blackw.*, Spid. Great Brit. and Irel., p. 34, pl. ii., fig. 16.

The length of the male is from $2\frac{1}{2}$ to $2\frac{3}{4}$ lines, and of the female $2\frac{1}{2}$ to $3\frac{1}{4}$ lines.

Although very nearly allied to *Pirata hygrophilus*, Thor., this spider may be distinguished without difficulty by its generally more yellow-brownish hue. It is also rather smaller. The following differences may be noted in the otherwise very similar pattern.

The cephalo-thorax has no marginal brown band. The normal longitudinal marking on the fore half of the abdomen is of a somewhat tapering, oblong form, blunt-pointed behind,

sometimes a little dilated in the middle, and of a brightish yellow colour, without any marginal dark line; the succeeding angular bars are usually much less distinct, being dull yellow-brown. The general colour of the upper part and sides of the abdomen is reddish yellow-brown; the two longitudinal rows of white spots are very vivid, and the fore part and sides are clothed in a somewhat streaky form, and also mottled, with equally bright bluish white hairs.

The two central eyes of the anterior row are rather larger than the laterals.

The legs and palpi are of a greenish-brown colour, the former without any dark annuli; and the digital joints of the latter reddish-brown. The radial joint of the palpus is longer than the cubital; the digital joint is much smaller than those of *Pirata hygrophilus*, and the palpal organs are less complex.

Excepting in size there is but little difference between the sexes.

Pirata piraticus is found in similar situations to those in which *Pirata hygrophilus* is met with, and is still more abundant in many localities. It is found, though not so commonly, in the neighbourhood of Bloxworth; but in the marshy grounds near Wareham it is exceedingly plentiful, as well as on the borders of Little-Sea, near Studland. It occurs also in other parts of England, as well as in many parts of Scotland. The upper rail of wood and iron fencing, in wet and marshy spots, is usually crowded with immature individuals of this spider, on bright warm mornings in May. They appear to come to such situations as these for the purpose of beginning their aerial excursions. When running along a rail they may be seen suddenly to stop and elevate themselves on their legs, standing as it were on tip-toe; then silken threads partly propelled from the spinners by the spider, and partly drawn out by the breeze may be seen floating out, and with a slight jerk the spider starts and sails away suspended in the air by its silken parachute. It is adult in June and July, and the egg cocoon is globular and white.

PIRATA LATITANS.

LYCOSA LATITANS, *Blackw.*, Spid. Great Brit. and Ireland, p. 33,
pl. ii, fig. 15.

The male measures 2 lines in length, and the female $2\frac{1}{2}$ lines.

This species may be distinguished from either of the foregoing (and from all other known spiders of this genus) by its small size, and more sombre colouring.

The cephalo-thorax is dark brown, with a very obscure wedge-shaped marking, defined by a paler marginal line, behind the eyes.

The legs are long, of a greenish yellow-brown colour, occasionally faintly annulated with a deeper hue.

The palpi are long and similar in colour to the legs; the radial is longer than the cubital joint; the digital joint is small, and the palpal organs not very complex.

The abdomen is of a dark blackish-brown colour; the normal marking on the fore half of the upper side is of a narrow oblong form, roughly pointed behind, of a yellowish colour, and, ordinarily, not very distinct; the succeeding angular bars or triangles are tinged with reddish and in general rather obscure, but occasionally well marked. On each side is a longitudinal row of small brilliant white spots, which present a remarkably characteristic contrast to the sombre hue of the surface. The fore part and sides are also striped and mottled with white pubescence.

The sexes differ chiefly in size, but the legs of the male are the longest and darkest coloured.

This spider is found in tolerable abundance at Bloxworth, and in the neighbourhood, among grass in damp meadows, and in swamps and marshes among rushes and sedge, as well as among moss in woods. Its egg-cocoon is round and white, and it is

adult in the months of May, June, and July. It has also occurred at Glanvilles Wootton, and has been met with in various other parts of England and Wales.

GENUS TROCHOSA, *C. L. Koch., Thorell.* LYCOSA, *Blackw.*

in part.

In this group the eyes, although unequal in size, do not usually differ as much as in the succeeding genera—*Tarentula* and *Lycosa*—nor is the area occupied by them, usually so large in comparison with the breadth of the caput. The length of the anterior row either exceeds perceptibly, or is never less than that of the second (or middle) row; and its two central eyes are larger than the laterals. (*Trochosa leopardus* is, however, an exception in respect to this last character). As in *Pirata*, the anterior row of eyes is very close to the lower margin of the clypeus; the interval not much exceeding, in any case, the diameter of one of its central eyes.

The sides of the caput (looked at from in front) are sloping but convex, and the "Facies" is low.

The legs are moderately long, strong, and not much attenuated at their extremities.

The spiders of this genus conceal themselves under stones, or low down among herbage in damp places; some form cylindrical holes in the earth, lining them with silk. One (*T. picta*) may be found at times running in sandy or gravelly places in sunshine.

Six species have been recorded as British; and of these four are found in Dorsetshire.

All the spiders included in *Trochosa* are joined by M. Simon with *Tarentula*, to form his genus *Lycosa*. I am unable, however, at present, to enter fully into this new arrangement, confessing at the same time that the generic divisions adopted here are not as strongly and satisfactorily marked as could be desired.

TROCHOSA LEOPARDUS.

LYCOSA LEOPARDUS, *Sund.*, Sv. Spindl. Beskr., Vet. Akad. Handl.
f. 1832, p. 189, and Thor. Syn. Eur. Spid.
p. 331.

LYCOSA CAMBRICA, *Blackw.*, Spid. Great Brit. and Irel. p. 32,
pl. ii., fig. 14.

The length of the male is about $3\frac{1}{4}$ lines, and that of the female from 4 to $4\frac{1}{2}$ lines, but both sexes vary a good deal in size.

The cephalo-thorax is broad and truncated in front, the lateral constrictions on the margins of the caput being slight; its colour is deep blackish-brown, thinly clothed with short, greyish, yellow-brown pubescence, and a few erect hairs, of which some on the sides and hinder part are white.

The legs are rather strong, not very long—4.1.2.3. Their colour is yellow-brown, varying a good deal in depth and clearness, and annulated distinctly with black.

The palpi are similar in colour to the legs, but much less distinctly marked. The radial and cubital joints are of equal length; the digital joint is of a very narrow, elongate-oval form, not much broader than the radial joint; the palpal organs occupying a circular cavity at its base, of less than half the length of the joint, and are neither prominent nor complex.

The lateral eyes of the anterior row are slightly larger than those of the central pair.

The abdomen is oval, rather broadest behind. It is closely covered with greyish yellow-brown pubescence, and some sparse erect dark hairs; the normal longitudinal marking on the fore part of the upper side is of a somewhat dusky brown colour, a little prominent on each side just past the middle, the prominences being brought out more strongly by a black spot in connection with each. The angular bars on the hinder part are short, similar in colour to the normal marking, but often very obscure, and (in males) frequently obsolete behind their extremities; and at their apices, which are usually broken, are black spots, often

connected by a fine black line, or running into each other, giving to the abdomen a very pretty and variegated look, most noticeable in females and immature males. The sides and under part are a mixture of yellow-brown, darken brown, and greyish; the latter with a narrow, spotty looking, brownish yellow, marginal stripe on each side.

Excepting in the points above noticed the sexes differ but very little.

This is a fine and handsome species. I have found it, though rarely, in damp meadows and marshy places at Bloxworth in June and July, but more abundantly at the Swannery, at Abbotsbury on the 20th of June, 1876. It has also occurred in other parts of England, as well as in various localities in Scotland, and in North Wales. The male can hardly be mistaken for any other British Lycosid, if the narrowness of the digital joints of the palpi be borne in mind.

TROCHOSA PICTA.

LYCOSA PICTA, *Hahn.*, *Blackw.*, Spid. Great. Brit. and Irel., p. 25, pl. i., fig. 8.

Like the foregoing species, the present also varies considerably in size. I have met with males measuring from $2\frac{1}{2}$ to nearly 4 lines in length, and females from $3\frac{1}{2}$ to 5 lines.

Trochosa picta is one of the handsomest, perhaps the handsomest, of all our indigenous Lycosids.

The form of the cephalo-thorax is very similar to that of *Trochosa leopardus*; it is of a reddish yellow-brown colour with a broad, lateral, blackish, or deep brown, band on each side, and a narrower marginal one of the same colour. The margins of the lateral bands are very irregular or denticulate, so that frequently the spaces between them and the marginal ones are reduced to a row of broken patches, and the central, red-brown band is represented by a large, transverse, oblong marking

behind the eyes, and a stellate or radiated one at the junction of the caput and thorax; between the two markings are two black spots or blotches in a short transverse line. The ocular area is black, and behind each of the two posterior eyes is a strongish, oblique patch of red brown. It should be mentioned that the transverse oblong behind the eyes always contains two small black spots in a transverse line on the middle. The whole cephalo-thorax is clothed with yellow grey pubescence, so that (as is the case also with many other species) the pattern only comes out strongly when the spider is immersed in spirit.

The legs are reddish yellow-brown, in general distinctly annulated with black, or black brown; the paler parts, and often the whole, clothed with greyish-white pubescence.

The palpi are similar to the legs in colour and markings. The digital joint is dark reddish-brown, and of an elongate, narrow-oval form, but not quite so narrow as that of *Trochosa leopardus*. The position and general form and structure of the palpal organs are very like those of that species.

The eyes of the central pair of the anterior row are slightly larger than the laterals.

The abdomen is rather broadest behind. The upper side is strikingly variegated with black, brown, white, greyish-yellow and red-brown—often also with bright reddish; presenting at first sight, no very easily traceable pattern; however in most cases the usual pattern may be discerned on the upper side. The normal longitudinal marking on the fore half is of a greyish yellow-brown colour, black at its fore part, edged with black posteriorly, and with a black prominent marking, joined to a yellowish spot behind it, at the broadest part. The hinder extremity of the normal marking is the narrowest, and is truncated; on each side of its fore part, contiguous and often confluent with it, is a large, irregular oval, reddish-yellow, whitish, or brownish-yellow marking; on the hinder half of the abdomen is a longitudinal, central, yellowish-brown band containing the normal angular bars; these are generally of a clearer yellow-

brown or yellowish-white colour, more or less strongly edged both before and behind with black, and often divided at their vertices with a black line. On either side of the first two of these bars is a large, distinctly defined, oval, yellowish, or whitish marking, followed towards the spinners by several other smaller ones decreasing gradually in size, the intervals between them being black. The fore half of the sides is black, the hinder part brownish-yellow, spotted with black; and the under side is of a dusky black or brownish hue. When, in addition to the above, the paler portions are in some parts (as is often the case) tinged strongly with red, the appearance of this handsome spider may be easily imagined. Much variation exists in the extent of the different portions of the above pattern, and in their depth of colouring; these often taking their prevailing tint from the colour of the soil in which the spider is found. The best marked, richest coloured, and largest examples are found (at least such is my own experience) on sandy and gravelly heaths, where there is considerable depth and variety of colouring, arising from the dark heath-soil, the grey-washed sands which streak it, and the bits of red, black-brown, and yellow gravel strewn on its barer parts. But on the uniformly tinted greyish-yellow sandhills between Poole and Christchurch I have found a dwarf, pale yellow-brown variety, with scarcely any dark markings on it at all, the legs even being of a uniform hue, and wholly destitute of dark annuli. It was long before I could be convinced that these last specimens were identical in species with the strikingly different examples found abundantly in the heath district at Bloxworth.

Trochosa picta runs in sunshine, and forms a vertical cylindrical hole in the sand, lining it slenderly with silk. It appears to be found throughout the sandy or heathy districts of this County; and I have met with it in tolerable abundance on the borders of the Chesil Beach between Weymouth and Portland. I have also received it from other parts of England, as well as from Scotland and Wales.

The sexes are marked alike, but the male is usually darker coloured than the female.

TROCHOSA RURICOLA.

ARANEA RURICOLA, Dögeer. Mem. vii., p. 282, pl. ii., fig. 13-14,
pl. 17, fig. 1-2.

LYCOSEA CAMPESTRIS, Walck., Blackw., Spid. Great Brit. and Irel.,
p. 18, pl. 1, fig. 3.

The length of the male is from $3\frac{1}{2}$ to 5 lines, and that of the female from 4 to 6 lines.

The cephalo-thorax of the male is clothed with greyish-yellow pubescence, and has a broad, tapering, central, brownish-yellow band, strongly constricted at the occiput. The fore part of this band runs into the ocular area; it has two not very long, parallel, longitudinal, olive-brown stripes near the middle, and the hinder part has a longitudinal red-brown line at the juncture of the thoracic segments. The sides of the cephalo-thorax are yellow-brown, tinged with olive, and with a paler yellow-brown, narrow, sub-marginal band. The anterior row of eyes is longer than the second, and its two central eyes are considerably larger than the laterals.

The legs are strong, moderately long, of a brownish-yellow colour; the tibiæ, tarsi, and metatarsi of the first pair being deep brown; the spines are strongest and most numerous on the third and fourth pairs.

The palpi are of tolerable length, and similar in colour to the legs, excepting the digital joint, which is deep brown; the radial joint is equal in length to the cubital, but stronger. The digital joint is of an elongate-oval form, broadest at its base, but not so narrow in proportion as that of *Trochosa picta* and *Trochosa leopardus*, and terminates with a strong, dark, curved claw. The palpal organs are confined to the base of the joint; they are prominent but not very complex.

The abdomen is oval, pointed behind, and of a general yellow-brownish olive hue above; the normal marking on the fore half of the upper side is of a rather clear yellowish colour, edged with black-brown, and pointed at its hinder extremity. The

angular bars on the hinder half (in well marked examples) often form either a series of triangular, yellow-brown, almost confluent markings, each with two small dark spots in a transverse line, or a tapering dentated band, traversed by fine blackish, as well as paler yellow-brown, curved or sub-angular lines, whose extremities are dilated into patches, which form on each side a longitudinal row of alternate pale and dark spots, converging to the spinners. These last rows of spots, however, are often the only markings traceable on the hinder half of the abdomen. The fore part has a broadish longitudinal black-brown, more or less well defined, marginal bar on each side. The sides are yellow-brown, with some oblique lines of black-brown spots, the under part being paler with an ill-defined, broken, marginal, dusky brown stripe on each side.

The female resembles the male very closely, but is usually lighter coloured. In both sexes there is much variation in the distinctness of the abdominal markings, which are sometimes almost entirely obsolete.

This fine spider is rather rare, in the months of May and June, at Bloxworth and in the neighbourhood, as well as in other parts of the County, under stones, or other similar protection in meadows, and also in the open places and grassy rides of woodlands. The egg cocoon is white and globular; and (according to Mr. Blackwall) it contains about 115 eggs. This species frequently passes the winter in a cavity hollowed out by itself under a stone. I have met with it in many other parts of England, and it is also found both in Wales and Scotland.

TROCHOSA TERRICOLA.

TROCHOSA TERRICOLA, *Thorell.*, Rec. Crit. Aran. p. 62, 102.

LYCOSA AGRETYCA, *Blackw.*, Spid. Great Brit. and Irel., p. 17, pl. i., fig. 2.

The length of the male is from 3 to 4½ lines, and that of the female from 4 to 6 lines.

This spider is nearly allied to *Trochosa ruricola*, Degeer, and

resembles it very closely in general appearance, colours, and markings, though its general hue is often of a redder-brown tinge. If the following differences are noted, the two species need never be confounded with each other.

The central pair of eyes of the anterior row are only a little larger than the laterals, the row itself being nearer to the falces; the metatarsi and tibiæ, only, of the first pair of legs are of a dark brown hue, and all the femora are faintly annulated with olive-brown. The sub-marginal yellow-brown band on the cephalo-thorax is generally more or less interrupted or broken. The normal marking on the fore half of the upper side of the abdomen is of the same hue as the surrounding surface, and only indicated by its dark marginal line; it emits an oblique dark line on each side towards its hinder extremity, which is narrower than the rest, but truncated, with its corners a little produced on each side in an oblique direction.

The palpi (of the male) are rather shorter than those of *Trochosa ruricola*, but the digital joint is larger and broader, and has no terminal curved spine.

The female of the present species may be distinguished from that of *Trochosa ruricola*, not only (like the male) by the smaller central eyes of the anterior row, and the form and colour of the normal marking on the abdomen, but also by the size and form of the genital aperture; this is large and conspicuous in the present, but very much smaller and inconspicuous in the former species.

Trochosa terricola is a more abundant spider at Bloxworth than *Trochosa ruricola*. It inhabits, generally, similar situations, but is oftener found among moss and dead leaves in woods, and among moss and heather on heaths and wastes. The egg-cocoon and its contents are very nearly similar to those of *Trochosa ruricola*, and the spider itself often hibernates in a similarly excavated hole in the earth under a stone.

I have received this spider from various other parts of Dorsetshire; and it is of frequent occurrence in numerous localities in England, Scotland, and Wales.

GENUS TARENTULA, *Sund.* LYCOSA, *Blackw.* in part.

Although it is difficult to draw a sharp line between the spiders of this and the foregoing genus, the present may be distinguished, generally, by the length of the anterior row of eyes, being a little shorter (certainly not longer) than the second row.

The facies is high and very broad towards the falcos, and the sides of the caput are strongly convex. The legs are generally strong, and but little attenuated at their extremities. The ocular area is at least as long as it is broad, and the interval between the anterior row of eyes and the falcos (*i.e.*, the height of the clypeus) is usually greater than in *Trochosa*.

The spiders of this group may be usually found running in sunshine; six species are at present known in Great Britain, but of these, four only have as yet been found in Dorsetshire.

TARENTULA PULVERULENTA.

ARANEUS PULVERULENTUS, *Clerck.*, Sv. Spindl., p. 93, pl. 4, tab. 6.

LYCOSA RAPAX, *Blackw.*, Spid Great Brit. and Irel., p. 21, pl. 1, fig. 5.

The length of the male is from $2\frac{3}{4}$ to $3\frac{1}{4}$ lines, and of the female from 4 to 5 lines.

The sides of the cephalo-thorax are dark-brown, with a marginal band of yellow-brown, and a broad, longitudinal, central one of the same hue, clothed with yellowish-grey pubescence; the central band is of very nearly uniform width throughout, and has no lateral constrictions; a short, longitudinal, red-brown line shews the thoracic junction.

The legs are strong, of a yellowish red-brown colour.; the femora marked with brown spots and markings; in males the femora and tibiæ of the first pair, and the femora of the second, are of a black-brown colour.

The palpi (of the male) are strong and of moderate length; their colour is yellow-brown, the digital joint deep brown; the radial is rather stronger than the cubital joint, and the digital is rather large. The palpal organs are not very complex, but have, among others, a strongish, prominent corneous process on the outer side.

The anterior row of eyes is distinctly shorter than the second row, and its eyes are all very small, apparently equal (or very nearly so) in size, and separated by equal intervals.

The abdomen has a broad, central, longitudinal, tapering yellow-brown band, clothed with yellowish-grey hairs. The normal marking at the fore extremity of this band is brown, and of largish size; its margins are black, and it terminates in a sharp point; the broadest part is a little past the middle, where it is subangularly prominent; on either side of the fore half of the central band is a somewhat diffused black band continued backwards by a succession of black and pale spots, representing the terminations of the ordinary angular or curved bars, which are of a pale hue, but very nearly obsolete in most instances; from some of the black spots just mentioned, oblique lines of smaller ones traverse the sides, which are of a brownish hue, and (with the under side, which is yellowish-brown) are clothed with yellowish-grey hairs.

The sexes do not differ except in size and in the points noted above. Varieties occur (of both sexes), in which the central abdominal band and its anterior normal marking are much more distinct than in others, the band being of a bright yellow-brown, and the point of the marking drawn out backwards into a fine line.

This spider is found, but not very commonly, at Bloxworth, and in various other parts of the county. The males run in sunshine, but the females are generally found among herbage or *débris* of various kinds in woods, on heaths, waste grounds, and commons, and in hedgerows. It appears to be generally distributed throughout England, Scotland, and Wales, and is adult in May and June.

TARENTULA CUNEATA.

ARANEUS CUNEATUS, *Clerck.*, Sv., Spindl., p. 99, pl. iv., tab. 11.

LYCOSA BARBIPES, *Sund.*, *Cambr.*, Trans. Linn. Soc. xxvii., p. 398.

„ ARMILLATA, *Walck.*, *Cambr.*, Zoologist 1861, p. 7555.

Length of the male, $2\frac{1}{2}$ to 3 lines, and of the female 3 to 4 lines.

This very distinct and striking species is nearly allied, and similar in its colour and markings, to *Tarentula pulverulenta*, *Clerck.*, but it is, in general, more distinctly marked, and the paler parts are clothed with whiter hairs. The male may be distinguished at a glance by the tumidity, or gouty-looking incrassation of the tibiae of the first pair of legs, the tumid part being deep black-brown and obliquely indented on each side.

Found by my nephew, Frederick O. P. Cambridge, near Sherborne in September, 1878, and by myself in June, 1879; also on the Downs near Hursley, Hants, in the month of May, 1862; as well as near Brighton, in June, 1871, but apparently a very rare spider there. It has also occurred in some abundance at Ringstead, on the Coast between Weymouth and Lulworth, in April, 1879, and I have received an example of it from Wokingham.

TARENTULA ANDRENIVORA.

LYCOSA ANDRENIVORA, *Walck.*, *Blackw.*, Spid. Great Brit. and Irel., p. 20, pl. i., fig. 4.

The male measures from $3\frac{1}{2}$ to $4\frac{1}{2}$ lines in length, and the female from $3\frac{1}{2}$ to 5 lines.

The cephalo-thorax is very like that of *Tarentula pulverulenta* in its markings, but the marginal band is broader; and the central band, which is thickly clothed with grey pubescence, is strongly constricted, or sharply indented, on each side of the occiput, and often more finely denticulate on the margins behind it. The sides are dark brown. The central eyes of the anterior

row (which is distinctly shorter than the second) are wider apart from each other than each is from the lateral eye on its side.

The legs are strong, of a reddish-brown colour, marked and annulated (but sometimes irregularly and sparingly) with black-brown, these markings being much toned down by the prevailing grey pubescence. In the males the femora only are marked with brown, those of the first pair, as well as the tibiæ and the base of the metatarsi, are black, the under sides of the tibiæ, which are rather incrassated, being thickly clothed with black hairs.

The palpi (of the male) are of a dark colour; the radial is rather stronger than the cubital joint; the digital joint is large and the palpal organs are neither very prominent nor very complex.

The abdomen of the female has on the upper side a broadish, central, tapering longitudinal band of a pale yellow-brown colour, clothed with grey pubescence; the normal marking on its fore part is long, rather narrow, brownish-black, with blacker spots on its margins, dilated past the middle, where its margins are angularly prominent, the point of the angle directed obliquely backwards; its posterior extremity is truncated, the corners produced, and emitting, on each side, an oblique black line. To the normal marking there succeeds a series of angular black lines, whose extremities, on either side, end in a pale spot with a strong, black, anterior margin. The remaining portions of the upper side are of a brown colour, mixed with grey, and spotted with black. The under part is yellow brown, clothed with yellowish-grey pubescence.

The abdomen of the male has the central longitudinal band, in general, of a more or less uniform grey, with strong, broad, black margins, broken into spots on the hinder part; from these spots oblique rows of smaller black ones traverse the sides. Occasionally, however, the normal marking and angular bars may be traced.

This spider is frequent on Bloxworth Heath, where both sexes may be seen running in sunshine in the spring and summer months. It is also found in other parts of England and in Scot-

land. The sexes are adult from March to July. Probably some of the adult males survive the winter, as they are found at times in the autumn, as well as in very early spring.

TARENTULA FABRILIS.

ARANEUS FABRILIS, *Clerck.*, Sv. Spindl., p. 86, pl. iv., tab. 2.

LYCOSA TARENTULA FABRILIS, *C. L. Koch.*, Die Arachn. xiv., p. 168, pl. ccccxviii., fig. 1392.

Length of the male from 5 to 6 lines, and of the female from 6 to 8 lines.

This fine spider is nearly allied to the foregoing, but is much larger, and the under side of the abdomen is of a velvety black colour. The markings of the cephalo-thorax and abdomen, though of a generally similar character, are bolder and more distinct, and present a still stronger contrast between the light-grey pubescence, and the black-brown, and black markings.

The legs of the male are yellowish red-brown, sparingly clothed with grey pubescence, and obscurely marked on the femora with brown. The femora and tibiæ of the first pair have none of the dark colouring or clothing of those of *Tarentula andrenivora*.

The palpi are rather long, and like the legs in colour, except the digital joints, which are large and dark brown. The radial is rather longer and stronger than the cubital joint; the palpal organs are not very complex, but have a strong, black, prominent process on their outer side.

The central eyes of the anterior row (which is nearly about equal in length to the second row, or perhaps slightly shorter) are larger than the laterals, all four being separated by very nearly equal intervals; if anything, however, the space between those of the central pair is rather the widest.

Tarentula fabrilis must rank among our largest indigenous

spiders; it is probably of extreme rarity in England; * the only example yet recorded being an adult male found running in sunshine on Bloxworth Heath, on the 10th of October, 1868.

The black underside of the abdomen, the almost uniformly-coloured legs, and the absence of black hairs on the under sides of the tibiae of the first pair, render it impossible (independent of its larger size) to mistake this spider for *Tarentula andrenivora*, the only other, as yet known, British species with which it could be confused.

GENUS LYCOSA. PARDOSA, *Sim.*, and *C. L. Koch.*,
LYCOSA, *Blackw.* in part.

The genus *Lycosa* may be distinguished from either of the three foregoing genera by the far more perpendicular sides of the caput, so that when looked at from in front the breadth just above the falces does not very greatly exceed that of the upper part of the facies. The clypeus is also higher, and the figure formed by the second and third rows of eyes is more nearly quadrate; the anterior row is shorter than the second. The legs are long—4.1.2.3.—and armed with long spines. The extremities of the legs are much attenuated, but there is no scopula beneath the tarsi, and the whole spider is well covered with hairs and hairy pubescence.

This genus comprises the bulk of the true *Lycosids*, and all of them are small, or of moderate size. They may be found in numberless situations, and at various times of the year according to the species, some of which are exceedingly abundant. All are very active, and most of them run in sunshine, which appears in some cases to be so essential to their comfort, that on a sudden obscuration of the sun's rays, even if only for a few moments, every spider disappears among the herbage as though by magic; and where, immediately before, the surface swarmed with spiders, there will not be one visible until the sun again shines out.

* Since the above was written (September 5-15, 1878) numerous examples of both sexes were found on Bloxworth Heath, near Woolbarrow.

Fifteen species have been, up to the present time, recorded as British, and, of these, twelve are found in Dorsetshire.

LYCOSA AMENTATA.

ARANEUS AMENTATUS, *Clerck.*, Sv. Spindl., p. 96., pl. iv., tab. 8, fig. 2.

LYCOSA SACCATA, *Blackw.*, Spid. Great Brit. and Irel., p. 26, pl. ii., fig. 9.

The male measures from $2\frac{1}{2}$ to $3\frac{1}{2}$ lines in length, and the female from 3 to 4 lines.

The cephalo-thorax is deep brown, with a longitudinal central yellow-brown band, strongly constricted, or deeply notched on each side at the occiput, and tapering to a point at the posterior extremity of the thorax. The fore part of this band is often much obscured by a brownish suffusion, and seldom quite reaches the ocular area. Besides the central band, there is a much narrower, broken, yellowish-brown one on each side near the margin.

The legs are long, tolerably strong, of a yellow-brown colour, tinged with reddish and annulated with dark brown or blackish; in females the annulations are very distinct, and are continued throughout all the joints excepting the tarsi; but in the males they are much less distinct, and extend only to the femora and tibiæ, frequently to the femora only.

The palpi are moderately long; their colour is dark yellow-brown, and often black; the radial joint is stronger than the cubital, and is densely clothed with longish coarse black hairs. The digital joint is of moderate size, and also clothed with black hairs; the palpal organs are not very prominent nor complex. Towards their fore extremity, or near the middle, there is a not very long, slightly oblique, curved, sharp pointed, tapering spine, at whose posterior extremity on the outer side is a small prominent point. The sharp point of the spine is directed forwards and outwards.

The two central eyes of the anterior row are rather larger than the laterals, and slightly further from each other than each is from the lateral eye nearest to it.

The abdomen is thinly clothed with long, bristly, prominent hairs, in addition to the usual shorter pubescence. The upper side is yellow-brown, frequently tinged with reddish-brown along the middle; the normal marking on the fore part is of a sub-diamond form and yellowish hue, pointed behind, margined with black, and emits a short, oblique, black line on each side from its broadest part. At a little distance from the normal marking, on each side, is a diffused, blackish, longitudinal band, continued backwards by a strong zigzag black line converging towards the spinners; the different parts of the zigzag lines are formed by the terminations of the usually obsolete angular bars; one of these parts, about half way between the termination of the normal marking and the spinners, is much stronger than the rest, and forms a conspicuous dark blotch, very characteristic of the species. The sides are yellow-brown, obscurely spotted with dark-brown, and the under side is of a paler hue. The normal marking is frequently clothed with greyish hairs.

The male is usually darker coloured than the female, and looks almost uniformly black as it runs about.

This is a very abundant species. All kinds of rough and waste places, especially those with faggot ricks, wood stacks, or heaps of refuse near, and overgrown in parts with rank herbage, are very favourite habitats for it; it is also found in woods and rough grass fields. In such situations it may be found, often in great abundance, on warm bright spring mornings. It is one of the largest British species of the genus, and is usually adult at the end of May and in June; but in some seasons it comes to maturity as early as March and April. I have seldom failed to find this spider in every part of Dorset in which I have looked for it in situations similar to that above mentioned; and it is distributed abundantly over the United Kingdom.

LYCOSA ANNULATA.

LYCOSA ANNULATA, *Thor.*, Syn. Eur. Spid. 299.

PARDOSA HORTENSIS, *Sim.*, Arachn. de Franco tom. iii., p. 343,
non. LYCOSA HORTENSIS, *Thor.*

LYCOSA ANNULATA, *Cambr.*, Ann. and Mag. N. H. Oct., 1875, p.
256, pl. viii., fig 10.

The length of the male is a little more than 2 lines, and that of the female from $2\frac{1}{2}$ to 3 lines.

This spider is nearly allied to *Lycosa amentata*, Clerk.; it is, however, smaller, and not so dark coloured. In the general character of its markings it is very similar to that species, but the central yellowish band on the cephalo-thorax is much more strongly indented, or constricted, at the occiput, and the lateral ones are closer to the margins. The normal marking on the fore half of the upper side of the abdomen is of a dull yellow-brown colour, pointed behind, slenderly edged, or spotted on the edges with blackish, and with a short, black, oblique line on each side of its broadest part. The angular bars are reddish yellow-brown, in general tolerably distinct, and divided into two parts by a black line at the apex; each part contains a small black spot, and at their terminations on either side is a black blotch. The sides are yellow-brown, obscurely marked with darker brown, and the under side is of a paler hue.

In the annulation of the legs this species resembles *Lycosa amentata*, though the legs themselves are of a paler, yellower colour. The sexes differ but little.

The male may be distinguished at a glance from that of *Lycosa amentata* by the colour of its palpi; in these the humeral joint is deep brown, the cubital yellow, slightly marked with brown near its base, and clothed with whitish hairs at its fore extremity; the radial joint is dark brown, and the digital joint still darker, both being densely clothed with black hairs, forming a strong contrast to the pale cubital joint.

The palpal organs differ remarkably from those of *Lycosa*

amentata, in the absence of the curved spine near the middle; the spine being replaced by a small, prominent, oval, tubercular process.

This spider is abundant in open places in woods, and on waste forest-like spots at Bloxworth, and in other localities in Dorsetshire, and is adult in the months of April, May, and June. It appears to frequent spots untenanted by *Lycosa amentata*. I have at any rate never yet found it in those places where that spider is abundant; nor have I found *Lycosa amentata* where *Lycosa annulata* is common. I have received examples of this species from the Isle of Wight.

LYCOSA ARENICOLA.

LYCOSA ARENICOLA, *Cambr.*, Ann. and Mag. N. H., October, 1875, p. 253, pl. viii., fig. 9.

The length of the male is 3 lines, and that of the female $3\frac{1}{2}$.

This spider may be easily distinguished from *Lycosa amentata* by the narrow, central, longitudinal, yellow band or stripe on the cephalo-thorax. This stripe begins on, or at, the ocular area as a fine line enlarging gradually to the thoracic junction, whence it tapers again to its extremity. The two marginal bands are broken into, generally, three portions, and are further from the margins than in *Lycosa amentata*. These three bands are yellowish, and the rest of the surface deep black-brown.

The legs are long, 4.1.2.3., of a dull yellowish colour, the tarsi of the first pair, with usually the tips of the fourth pair, and sometimes also of all the rest, black. All the femora are more or less clouded or suffused with black, the upper sides being frequently marked with two elongate-oval, clear, yellowish patches, giving them a somewhat striped look. The spines, especially those on the fourth pair, are long.

The palpi are black-brown; the radial is stronger than the cubital joint, and with the digital (which is large) is clothed thickly with black hairs.

The palpal organs have a long, strong, oblique, slightly-

curved process near their centre; it tapers a very little to its obtuse extremity, which is directed outwards, and its surface is rather roughened and rugulose. The digital joint has a short, curved, terminal spine.

The abdomen is dark brown, its hairy clothing varying from grey to yellow-grey and black. The pattern is generally much obscured, but, when traceable, the normal marking, on the fore-half of the upper side, is blunt pointed at its posterior extremity, and very obtusely angular on each side near the middle, making it almost of an elongate oval form; it is of a dull brownish-yellow, indistinctly edged with black, and often clothed with pale grey hairs. The angular bars on the hinder half are short, strong, of a rusty yellow colour, and each has two small black spots on it, one on each limb. These spots are most conspicuous in the female, and form a series of pairs, each pair being placed in a transverse line. The sides of the abdomen, in the female, are mottled with numerous minute tufts of pale hairs; and the legs are of a darker more suffused colour than those of the male, with now and then a very faint trace of annulation.

About thirty-five examples of this spider were obtained at the beginning of June, 1875, and in June, 1879, near the railway station at Portland, among pebbles, brickbats, and other débris on the edge of the Chesil Beach.

Although very active when disturbed, and difficult to capture among the loose pebbles, they did not appear to be running of their own accord in the sunshine.

I have also met with this species on the coast of Brighton, and have received both sexes from France where they were found, and kindly sent to me, by Mrs. W. Collings of Sark.

LYCOSA LUGUBRIS.

LYCOSA LUGUBRIS, *Walck.*, *Blackw.*, Spid. Great Brit. and Irel., p. 27, pl. ii., fig. 10.

The length of the male is from $2\frac{1}{2}$ to $2\frac{3}{4}$ lines, and of the female from 3 to $3\frac{1}{2}$ lines.

The male of this spider can hardly be mistaken, in the adult state, for any other *Lycosa* indigenous to Britain. The broad longitudinal, central band on the cephalo-thorax, being almost of equal width throughout, and thickly clothed with white hairs forming a striking contrast to the black hue of the rest of the surface. The abdomen also is black, clothed with white hairs on the fore part, and, indeed, often on the upper side generally. The legs are long, not very strong, of a brownish colour, the femora being suffused with black.

The palpi are long, and of a blackish-brown hue, the radial joint thickly clothed with black hairs. The digital joint is of a rather narrow, elongate-oval form. The palpal organs have a slightly curved, oblique tapering, pointed spine, directed forwards from near their centre.

In the female, the thoracic band is of a pale brownish or yellow-brown hue, without the white hairs which render the male so conspicuous, and tapers more towards the posterior extremity; there are also two obscure, parallel, yellow-brown lines near the lateral margins on each side. The abdomen is of a yellowish-brown colour; the normal marking on the fore half of the upper side is of a paler hue, indistinctly edged with black, with a prominent black point on each side near the middle, and truncated at its hinder extremity, which is narrower than the central part. On each side of the fore extremity of the abdomen is a largish black patch, and a tuft of pale hairs in the middle between the black patches. The angular bars are indistinct. Their extremities form on each side a longitudinal row of blackish-brown blotches, the spaces between which are of a pale hue, forming two converging lines of alternate black and pale yellow-brown spots. The sides are mottled with blackish brown.

The legs also, in the female, differ from those of the male in being of a roddish-brown colour, annulated with dark brown.

This spider appears to be almost exclusively an inhabitant of woods; at least, I have never myself met with it in any other situation than in, or close by, plantations, woods, and coppices; in such situations in the neighbourhood of Bloxworth it is

exceedingly abundant, the dead leaves of the previous year being quite alive with them on bright mornings in May and June; they then come out to bask in the sun, disappearing as if by magic on the smallest obscuration of its rays. It is at this period that they are in the adult state. The male is a striking object, with his jet black, and white habiliments; and the more soberly coloured females may be seen throughout the summer with their egg cocoons attached to the spinners. Long before this, however, the males, with an occasional exception, have disappeared. I have met with this species in other parts of Dorsetshire; it occurs also in many part of England, as well as in Scotland, and is abundant in North Wales.

LYCOSA PULLATA.

ARANEUS PULLATUS, *Clerck.*, Sv. Spindl., p. 104, pl. 5, tab. 7.

LYCOSA OBSCURA, *Blackw.*, Spid. Great Brit. and Irel., p. 28, pl. ii., fig. 11.

The male measures from a little more than 2 to $2\frac{3}{4}$ lines in length, and the female from $2\frac{1}{2}$ to 3 lines.

The cephalo-thorax of the male is of a dark yellowish-brown colour, the ocular region black-brown; the central, longitudinal band is narrow, sometimes very slightly dilated at the occiput, and of an obscure reddish-brown colour. The lateral bands (of the same colour) are also narrow, not very well defined, and near to, but not touching, the margins.

The legs are rather long, moderately strong, of a brownish-yellow colour often tinged with red-brown; the femora of the first pair are strongly suffused with blackish, and those of the other pairs are obscurely annulated with brown, the annuli being scarcely discernible on the under sides.

The palpi are moderately long, and of a yellow-brown hue, the digital joint (which is of moderate size) being dark brown. The palpal organs are not very complex but tolerably prominent; a strongish, tapering, sharp, pointed spine runs obliquely from

their centre to the outer side, which, however, its point scarcely reaches, and another more slender one runs from the inner side towards the outer, but less obliquely, and crosses the central spine towards its fore extremity and beneath it.

The abdomen is rather broader behind than in front; its general colour is dark blackish-brown, but when examined narrowly, the upper side, along the middle, is of a reddish-brown hue: the normal marking on the fore part is obtuse at its posterior extremity, and defined by a black line on each side at its broadest part; at about two-thirds of its length backwards, is a prominent point or short oblique line, whence the marking tapers a little to its end. The angular bars or lines are black, and their extremities form together two converging zig-zag black lines with pale hairs within the angles; in some examples, especially of the female, the angular bars may be better described as strong, and of a reddish-brown colour edged with black. The sides are obscurely marked with small linear blackish spots, and the under side is brown. These parts are frequently clothed with yellowish grey hairs.

The sexes differ but little excepting in depth of colouring, the male being usually the darkest.

This spider is abundant on heaths, waste grounds, and open places in plantations, as well as in gardens at Bloxworth and its neighbourhood, and is probably equally common throughout the county. There will be no difficulty in distinguishing it from either of those already described; from *Lycosa amentata* and *Lycosa arenicola* (for instance), by its much smaller size as well as by the absence of the dense black hairy clothing of the radial and digital joints of the palpi; from *Lycosa lugubris* it may be distinguished by the white clothing of the male of that species, which is also larger; and from *Lycosa annulata* by the totally different form of the central thoracic band, and far less annulated legs. It will be less easy to distinguish it from the three following species; the colours, however, and especially the annulation of the legs, and the form of the palpi and palpal organs afford good and distinctive

characters, scarcely possible to be mistaken when once clearly apprehended.

Lycosa pullata appears to be common throughout Great Britain and Ireland.

LYCOSA PROXIMA.

PARDOSA PROXIMA, *C. L. Koch*, Die Arachn xv., p. 53, pl. 517., figs. 1453, 1454.

LYCOSA PROXIMA, *C. L. Koch*, *Cambr.*, Ann. and Mag. N. H., February, 1878, p. 125, pl. xi., fig. 6.

The length of the male is about $2\frac{1}{2}$ lines, and of the female from $2\frac{1}{2}$ to 3 lines.

This spider is nearly allied to *Lycosa pullata*, Clerck, but may be distinguished, not only in the male, by the structure of the palpal organs, and more distinctly annulated femora of the legs; but, in both sexes, by the distinct, yellow, central, thoracic stripe, and broken marginal ones of the same colour. In the female the legs are wholly annulated excepting the tarsi, while in the males there are seldom any annuli excepting on the femora of the three hinder pairs.

The cephalo-thorax of the male is of a deep blackish-brown hue. The central stripe is narrow, yellow, tinged often with reddish, and clothed with grey hairs, and of an attenuated diamond shape, the fore extremity terminating in a fine line, just short of the ocular area; the hinder extremity being not quite so fine. The lateral stripes are well removed from the margins; they are interrupted or broken, similar in colour to the central one, but seldom so distinct.

The legs are yellow-brown, frequently tinged with red-brown. The femora of the first pair are marked and strongly suffused with black, those of the other three pairs are pretty distinctly annulated with the same colour; the tibiae are occasionally faintly annulated, the metatarsi more rarely still. The femora of all the legs are occasionally more or less black from an apparent confluence of the dark annuli. The palpi are long; the humeral

joints are blackish, the cubital and radial joints deep brown, and the digital joint black; this last is of a narrow oval form. The palpal organs are not very complex; near their centre on the outer side is an obtuse, short, corneous process; and a slender slightly curved spine runs from the inner side across towards the outer side, its fine point ending just in front of the obtuse process.

The abdomen is rather broadest behind; it is black, clothed with numerous greyish hairs. The pattern is often almost obsolete, especially the angular bars on the hinder half of the upper side. When traceable the normal marking is of a reddish-brown colour, clothed thickly with yellowish-grey hairs, and of a somewhat attenuated, diamond-shape, sharpish pointed behind. The angular bars are, in some examples, reddish-brown; in others they are obsolete, excepting their dilated extremities; these form two longitudinal converging rows of black spots, which alternating with pale ones formed by greyish hairs, comprise all the visible markings on the hinder half.

The sexes resemble each other, excepting that in the female the lateral thoracic stripes are brighter and more distinct, and the legs more distinctly annulated. The annulations being extended (though not as distinctly as on the femora and tibiae) to the metatarsi.

This spider occurs, though not very abundantly, in the kitchen garden at Bloxworth Rectory, running in sunshine on the bare ground in the months of April and May; at first sight it looks very like a small example of *L. amentata*, but the male may be distinguished easily by the smaller digital joints of the palpi, which, with the radials, are also far less clothed with black hairs. I met with it, however, in abundance on the swampy flats, near Littlesea at Studland, in June, 1877, on spots whence the winters floods had retired, and the mud-bed dried up. Here it found congenial moisture, as well as shelter beneath tufts of herbage, and heaps of refuse, such as weeds, sticks, and débris of various kinds. It is altogether a darker spider than *Lycosa pullata*; the palpi also are longer, the

digital joint narrower, and the strong oblique spine near the centre of the palpal organs of that species is absent in the present one, being replaced by the short obtuse process above mentioned.

LYCOSA RIPARIA.

LYCOSA RIPARIA, *C. L. Koch*, *Dio Arachn* xv., p. 29, tab. 512, figs. 1435-6, and *Cambr. Ann. and Mag.* N.H., Oct. 1875, p. 257, pl. viii., fig. 11.

The length of the male is $2\frac{1}{2}$ lines, and of the female 3 lines.

This spider, though nearly allied and very similar, may be distinguished from the foregoing (*L. proxima*) by several constant and easily observed characters. First, the whole spider is less dark coloured, the central thoracic stripe, which is clothed with whitish hairs, is less vivid and seldom reaches the ocular area. The lateral thoracic stripes, though irregularly edged, are seldom completely broken. The legs are longer and more distinctly annulated, the tibiae especially, the metatarsi only faintly so; none of the femora are at all suffused with black, the annuli being all distinct. The whole spider has in fact a more variegated appearance from all the paler portions being usually clothed with grey or whitish hairs.

The palpi are longer than in *L. proxima*, and pretty thickly clothed with coarse black hairs; the hairs on the digital joint soften off into a greyish mouse-colour at its fore part which is itself of a dull yellow-brown hue; the form of this joint is elongate-oval, terminating with a strongish curved claw. The palpal organs have a strong, slightly curved, oblique spine near the centre. The point of this spine reaches quite to, and even slightly beyond, the margin of the digital joint; just in front of it is a much finer spine, which issues from near the inner margin of the joint.

The abdomen is marked very like that of *Lycosa proxima*, but the pattern is generally more distinct and discernible. The central longitudinal portion of the upper side is usually rather reddish-brown. The normal marking on the fore half is

usually of a brighter colour and edged with black ; it is clothed, especially in front, with white hairs, and has a prominent point on each side at its widest part, whence it tapers to its extremity which is obtuse. The angular bars are black, generally distinct, often particularly so, and their terminations are dilated and continued in short lines on the sides ; the intervals between their terminations form pale spots. The sides are marked with linear spots and markings, and clothed with greyish and other hairs ; the grey ones often forming oblique lines. The underside is reddish-brown, marked with an obscure blackish central, and sometimes a lateral, stripe of the same hue on each side.

The female is lighter coloured, being of a dark brown hue, but in other respects resembles the male.

This spider occurs, not unfrequently, in the kitchen garden at Bloxworth Rectory, as well as in woods and on waste grounds towards the end of April and in May ; running in sunshine among the rough knobs of earth where the soil has not been very lately disturbed, or among the herbage. Directly the sun is obscured, or if danger threaten, these spiders quickly find a refuge among the clods, whence it is no very easy matter, sometimes, to dislodge them. It is probable that this spider is generally distributed, though very likely to be overlooked owing to its similarity at first sight to several other species. Excepting however in the locality above mentioned, and at Glanvilles Wootton, the only other as yet recorded one in England is on the Brighton coast, where I met with it in June, 1871.

LYCOSA PRATIVAGA.

LYCOSA PRATIVAGA, *C. L. Koch.*, *Dio Arachn. Fauna Galiziens*, p. 43 ; and *Cambr.*, *Ann. and Mag. N.H.*, October, 1875, p. 258, pl. viii., fig. 12.

The male measures $2\frac{1}{2}$ lines in length, and the female $2\frac{3}{4}$ lines.

This spider is exceedingly closely allied to *Lycosa riparia*, the legs being very similarly though not quite so vividly, annulated. The thoracic stripes are also less distinct, more nearly resem-

bling in this respect *Lycosa pullata*, from which however the distinctly annulated femora at once distinguish it. The digital joints of the palpi appear to be rather shorter than those of *L. riparia*, and instead of a terminal, *sharp-pointed*, curved, spine, they have a shorter somewhat tuberculiform one. The oblique spine connected with the palpal organs is straighter, broader at its base, and has a flattish appearance; the finer spine in front of it is also slenderer.

The abdomen is very similar, both in colours and pattern, to that of *Lycosa riparia*. The normal marking on the fore part is perhaps of a brighter yellowish red-brown hue, and the hinder extremity of this marking, though not sharp, is yet less obtuse. The angular bars are indistinct, and in some instances obsolete; their dilated terminations on each side, however, are distinct, as well as the pale intervals between them. The female resembles the male, except in not being quite so dark coloured.

Several examples of this spider have been found at Bloxworth, and in more than one other locality in Dorsetshire; though being at the time of capture mistaken for another commoner species (*Lycosa amentata*) the exact localities were not noted. From *Lycosa amentata* there will be no difficulty in distinguishing the males of this and the foregoing species (*Lycosa riparia*) by the far narrower digital joints of the palpi.

LYCOSA NIGRICEPS.

LYCOSA SACCIGERA, *Thorell.*, Rec. Crit. Aran. p. 55.

„ NIGRICEPS, *Ibid.*, l.c. p. 56.

„ CONGENER, *Cambr.*, Trans. Linn. Soc. xxvii., p. 393, pl. liv., fig. 1.

The male measures rather less than 3 lines in length; the female about $3\frac{1}{2}$ lines, or rather more.

There will be no difficulty in distinguishing this species from the four that have preceded it; the legs being devoid of annulation; the greater breadth and lighter hue of the thoracic bands,

contrasted with the black ocular area, will also serve to separate them at a glance.

The cephalo-thorax is dark brown, sparingly clothed with whitish hairs, and some prominent black bristles on the caput, the upper part of which, comprising the ocular area, is black. The central and lateral thoracic bands are broad, of a brownish-yellow hue and irregularly edged. The central band is strongly constricted (in some instances almost divided), at the occiput, and the lateral ones run very near to the margins, and are continued round the clypeus. The breadth of these bands usually equals the breadth of the brown parts between them.

The legs are long; they are of a yellowish colour, tinged with red-brown, and often with greenish olive; the femora of the male are strongly suffused with blackish, those of the female being slightly marked and obscurely blotched with brown on their upper sides.

The palpi (of the male) are tolerably long, of a brownish-yellow colour, sometimes much darker; the radial and digital joints are black-brown, and densely clothed with long coarse, black hairs. The digital joint is large. The palpal organs are rather complex, and a strongish, sharp-pointed, oblique, tapering spine issues from near their base on the inner side, and its slightly curved point terminates near their fore extremity on the outer side.

The abdomen is reddish and yellow-brown, furnished with whitish-yellowish and dark hairs. The pattern is obscure in adult examples. The normal marking on the fore-half of the upper side is yellow-brown, pointed at its hinder extremity, and has an angular prominence on each side at its broadest part. The angular bars are dark-brown, generally obscure, but the intervening yellow-brown spaces often themselves form strong angular bars. The extremities of the dark bars form a zigzag or dentated line, from the outer angles of which obscure oblique lines of blackish spots traverse the sides; the intervals of the denticulations are of a paler hue. The sides and underpart of

the abdomen, in the male, are pretty thickly clothed with whitish hairs.

The female is paler coloured, and of a yellower hue than the male, and the markings are much more distinct, though in their general character resembling those of the male. Immature examples have the dark pattern very distinctly marked on a yellowish ground.

This spider is abundant on Bloxworth Heath and in other parts of Dorsetshire, and is found (but more sparingly) in many other situations, such as open places in woods, on commons and wastes, &c. The egg cocoon of the female is of a dark greenish olive hue. Its activity is very great, and it is adult in May, June, and July. I have received it from many parts of England, and also from Scotland.

LYCOSA HERBIGRADA.

LYCOSA HERBIGRADA, *Blackw.*, Spid. Great Brit and Irel., p. 22, pl. 1, fig. 6, and pl. xii., fig. 6, a.b.

The length of the male is $2\frac{1}{2}$ to $2\frac{3}{4}$ lines, and of the female 3 to $3\frac{1}{2}$ lines.

The central, and marginal bands of the cephalo-thorax are broad, and of a pale, slightly reddish, yellow-brown colour, densely clothed with greyish white pubescence; the ocular area is black, and the intervals between the central and marginal bands are deep, black-brown, and form two conspicuous, well defined, though irregularly edged, and often interrupted longitudinal bands. The central band is very strongly constricted at the occiput, and tapers at its hinder part.

The legs are long and tolerably strong, those of the fourth pair being the longest; they are of the same colour as the paler portion of the cephalo-thorax, clothed with grey-white pubescence, and marked with blackish streaks, spots, and annuli. There is considerable variation in the extent and distinctness of these markings on the legs, in different individuals.

The palpi are moderately long, of the same colour as the legs, the digital joint being deep black brown, of large size, clothed with black hairs, and terminating with a curved claw, the hairs on the forepart being grey; the radial, which is stronger than the cubital joint, is brown, the latter clothed with white hairs, mixed with a few black ones. The palpal organs are prominent and rather complex, very similar to those of the next species, *Lycosa palustris*. The obtuse process at their centre, slightly exceeds in length, double its breadth, and the spur behind its base is stronger and sharper [pointed than that of *Lycosa palustris*.

The abdomen is oviform; its sides and all the paler parts of the upper side are densely clothed with grey-white pubescence; the normal marking on the fore part is large, of a brownish-yellow colour, edged by a broken but strongish black line, and generally obtuse at its posterior extremity, but not truncated; a broad space round it, and a broad tapering band behind it, edged on each side with a strong and somewhat zigzag black stripe, is of a darker yellow-brown hue, sometimes tinged with red-brown. The angular bars are rarely visible, the different parts of the zigzag stripe represent their terminations, and from several of the outer angles of this stripe oblique rows of black spots and markings traverse the sides. The under-part is of a pale brownish colour, thinly clothed with white pubescence.

There is, however, considerable variation in the extent of the black markings on the abdomen. In many cases they consist of merely strong, though broken, spots and edgings; but the general character of the pattern, as above described, is always preserved. A rare variety deserves notice, on account of its near approach in pattern to *Lycosa palustris*; in this variety the central pale thoracic band is very narrow, attenuated to a rather fine line at its fore extremity, and with no dilation at the occiput; the lateral bands are of the same hue, narrow, well and regularly defined on the edges, leaving a very broad regular band on each side, of a deep black-brown colour; and there is on each side a narrow, black-brown, marginal band, stripe, or line. The abdomen is of a darker

colour than usual, and the oblique rows of spots on the sides are more numerous and more regularly carried out. In a female of this variety the legs were totally devoid of any dark markings. In a male of the same variety the under side of the abdomen had a central, longitudinal, blackish stripe, and a less distinct, spotty-looking, marginal one on each side, the ground colour being reddish yellow-brown. The legs in this last example had merely a few faint dark markings on the upper sides of the femora. Another very similar male, however, had the legs marked according to the normal type.

The sexes of this very pretty and distinct species resemble each other excepting in size. It is abundant in numerous parts of Bloxworth Heath and other similar localities in the neighbourhood, being adult at the end of May and in June. It cannot be mistaken for any other *Lycosa*, the contrast between its general ashy-white colour (caused by its hairy pubescence) and black and dark-brown markings, being very striking. Though abundant, it is rather local, and where one is found there are usually many others not far off. Like others of this group it is exceedingly active in sunshine, though influenced also in a moment by the withdrawal of the sun's rays. The original examples of this species were found by myself on Bloxworth Heath, though Mr. Blackwall inadvertently gives Portland as a locality.* Hitherto it has only occurred in England.

About the middle of June, 1877, I met with several females in the act of forming their egg cocoons; these consisted, each, of a hollow disk of pure white silk, some being further advanced towards completion than others. It is probable that the female deposits her eggs in the cocoon as soon as it has attained a hemispherical form, and then spins an opposite silken hemisphere over them, finally attaching the cocoon to her spinners, and in this way bearing it about with her until the young spiders are hatched. When completed the cocoon assumes a greenish olive tint.

*Since the above was written I have received *Lycosa herbigrada* from Scotland.

LYCOSA PALUSTRIS.

ARANEA PALUSTRIS, *Linn.*, Syst. Nat., Ed. 10, I., p. 623.

LYCOSA EXIGUA, *Blackw.*, Spid. Great Brit. and Ireland, p. 29,
pl. ii., fig. 12 (in part).

LYCOSA TARSALIS, *Thor.*, Syn. Europ. Spid., p. 288.

The length of the male is $2\frac{1}{4}$ to 3 lines, and that of the female from $2\frac{1}{2}$ to $2\frac{3}{4}$ lines.

The cephalo-thorax is dark-brown, with the three ordinary longitudinal bands (which are well defined, but narrow), of a yellow colour, clothed with grey hairs; the lateral bands have a distinct narrow brown stripe between each of them and the margin, which is itself very narrow and of a yellow hue; the central band is drawn out anteriorly into a rather fine line, which cuts a little into the deep blackish ocular area.

The legs are long, not very strong, of a dull yellow colour; the upper sides of the femora marked with longitudinal black streaks and markings.

The palpi are similar in colour to the legs, excepting the digital joint, which is deep brown; this joint is large, and of a very broad-oval form, pointed at its fore extremity, which ends with a small curved claw; the palpal organs are prominent and rather complex; near their centre is a strong obtuse process, not more than double the length of its breadth, and with a large blunt pointed spur, or conical process, behind at its base.

The abdomen is oval, more or less clothed with grey or yellow-grey hairs, obscuring the real colours and markings, which (like those of all the *Lycosides*) are best seen when in spirit of wine. The colour is brownish-yellow (frequently tinged with red-brown) along the middle of the upper side. The normal marking at the fore part is edged with black, and obtuse at its hinder extremity. The angular dark bars or lines which succeed the normal marking are generally obscure, and often obsolete, excepting the extremities, which form short stripes, alternating, as in many other species, with pale spots; in some well-coloured and distinctly-marked examples the intervals between the

angular bars form a series of reddish-brown triangles, or a broad dentated band. The sides are dark brown, marked and spotted with blackish, some of the spots frequently forming oblique lines, and there are often some pale spots on each side, next to the spinners. The under part is of a blackish hue, with two obscure, longitudinal, submarginal, reddish-brown stripes, which converge towards the spinners.

The female is usually more distinctly marked than the male, and the thoracic stripes are broader; the submarginal brown one being often very narrow and much broken. The genital process is large, of a reddish colour, and as broad at its posterior extremity as it is long.

This spider occurs, but (as far as my experience goes) not plentifully, in various parts of Dorsetshire, on waste lands, and in meadows, in the months of May, June, and July. I also meet with it, occasionally, running on the bare ground, or in the strawberry and raspberry beds, in the Rectory garden at Bloxworth. It is allied to *Lycosa herbigrada*, Blackw., but the larger size and hoary white and black markings of the latter will entirely prevent any confusion of the two. From *Lycosa pullata* the clearly defined thoracic stripes, and large digital joints of the palpi, separate it easily; while from *Lycosa riparia* and *Lycosa pratiraga* it may be known at once by the absence of dark annuli on the legs. I have received *Lycosa palustris* from various parts of England, and have met with it myself in tolerable abundance at Southport, in Lancashire; it appears also to be generally distributed in Scotland.

LYCOSA MONTICOLA.

PARDOSA MONTICOLA, *C. L. Koch.*, *Dic. Arachn.* xv., p. 42, pl. 515, fig. 1446-48.

LYCOSA EXIGUA, *Blackw.*, *Spid. Great Brit. and Irel.*, p. 29, pl. ii., fig. 12 (in part).

In size, form, colours, and markings this spider so closely resembles *Lycosa palustris*, that all attempts by various

arancologists, to distinguish them satisfactorily by these characters alone, have totally failed. The only tolerably constant difference in colours and markings that I have been able myself to observe is the greater distinctness of the pale spots between the terminations of the angular bars on the posterior half of the abdomen; these increase in size and distinctness near the spinners, often becoming confluent in the female, and thus so much the more conspicuous. The male also shows the same character, though in a less degree. The adults, however, may be separated without difficulty. The male, by the distinctly, smaller, and narrower digital joints of the palpi; and by the central obtuse process of the palpal organs being less robust and considerably longer than that of *Lycosa palustris*. The female may be distinguished by the smaller area of the genital aperture, which is less quadrato, being considerably longer than broad.

This spider occurs in the same localities as those mentioned for *Lycosa palustris*, and in about similar number. In the month of June, 1877, however, I met with the present spider (*Lycosa monticola*) in great abundance on Muston Down (between Bloxworth and Blandford), and, after a whole day's collecting over a large area of that district, not a single example of *Lycosa palustris* was found. Probably the headquarters of these two spiders are in distinct situations, stragglers from each intermixing in the intervening localities. I have, however, not yet found any such headquarters for *Lycosa palustris*.

There is no doubt but that both species are included under the *Lycosa exigua* of Blackwall, as both were, some years ago, sent to me from North Wales, by Mr. Blackwall, under that name.

Lycosa monticola occurs pretty generally throughout England, as well as in Scotland.





FAMILY SALTICIDES.

THIS family includes those spiders popularly known as “jumping spiders.” They spin no snare, but, hunting about for their prey, leap suddenly upon it, with unerring aim, and often from a (comparatively) considerable distance.

They may be easily known by their more or less quadrate, and frequently massive, cephalo-thorax, which is usually longer than broad ; and on the fore-half of which the eyes, which are of very unequal size, and of various colours, are placed in a large quadrangle. The four anterior eyes form the front of the quadrangle, and are usually of very large size, the two next are very minute, and form an intermediate transverse row ; the two posterior ones are of medium size, and form the hinder side of the quadrangle. The legs are usually of moderate length, though varying considerably in their relative length in different genera and species, but always terminating with two claws, beneath which there is frequently a compact claw-tuft, or short scopula.

The maxillæ are straight, enlarged at the base, and rounded at the extremity ; the labium is of an oval form, obtuse at the apex.

This is probably the largest (in respect to the number of species) of all the various spider-families. Nearly, if not quite, eleven hundred species have been described from all parts of the world. The number of European species is very large also ; those of France (which, probably, include most of those indigenous to Europe—excepting, perhaps, its extreme eastern parts) amount to nearly one hundred and fifty. The number as yet recorded in Great Britain is thirty-one, distributed among thirteen genera ;

sixteen species only, divided among nine genera, have been, up to the present time, found in Dorsetshire.

GENUS EPIBLEMUM, *Hentz.* CALLIETHERA, *C. L. Koch.*, and SALTICUS, *Blackw.*, in part.

In this genus the cephalo-thorax is elongate, rather flat on the upper surface, and the caput is but slightly narrower than the thorax. The two posterior eyes are a little smaller than the laterals of the anterior row, and form a line of the same length. The legs of the first and fourth pairs are the longest, and of very nearly equal length, as also are those of the second and third pairs; and (excepting a circle of spines at the extremity of the metatarsi of the third and fourth pairs) all are devoid of spines. The falcēs of the male are, in the adult state, greatly, though not always equally, developed, being long, cylindrical, projecting, divergent, and armed with a fang of corresponding dimensions.

The pattern of the abdomen usually assumes the form of oblique, transverse, pale stripes, on each side of the central line of the upper side on a dark ground.

The species of this genus are not numerous in Great Britain, where three only (all found in Dorsetshire) have been as yet detected out of eleven recorded as European. They are usually found on old walls, trunks of trees, palings, and gate posts, on which they hunt for flies and other insects whose habit is to sit and enjoy the bright sun's rays. They may be seen elevating the caput so as to command a greater extent of view with their large and brilliant anterior eyes, and woe to the unlucky fly perched within leaping distance. The possible length of their leap is considerable, and its aim generally unerring.

In leaping upon their prey from a perpendicular surface, these spiders would inevitably fall to the ground were it not for the support (mentioned in the *Introduction*, p. xxiv.) of silken lines secured by the spinners to the surface at the moment of springing, and drawn out by the force of the leap. These lines act as a guide-rope to bring the spider back to the surface at the extent

of its leap; but I have never seen it return (as some observers have stated to me that it can) to the point whence its leap begun, in the event of missing its aim; indeed, I do not see how it possibly could do so, even allowing for the utmost elasticity in the emitted lines.

EPIBLEMUM SCENICUM.

ARANEUS SCENICUS, *Clerck.*, Sv. Spindl., p. 117, pl. v., tab. 3.

SALTICUS SCENICUS, *Blackwall*, Spid. Great Brit. and Irel., p. 47, pl. iii., fig. 24 (in part).

CALLIETHERA HISTRIONICA, *C. L. Koch.*, Die Arachn. Bd. xiii., p. 42, tab. 439, figs. 1110, 1111, and *Cambridge*, Zoologist, 1863, p. 8597.

The length of the male is rather less than 3 lines, and the female is a little larger.

The cephalo-thorax of the male is of a deep, blackish-brown colour on the thoracic region, and the caput black; the lateral margins have a broadish border of coarse white hairs, and behind each of the two posterior eyes is an elongate, oblique spot of similar hairs; numerous others also form a more or less regular band just behind the front row of eyes.

The legs are yellow-brown, clouded and indistinctly annulated with deep blackish-brown, and clothed with hairs of varied length, strength, and hue.

The length of the long, divergent and projecting falcēs sometimes exceeds that of the cephalo-thorax.

The palpi are long, of a yellow-brown hue, clothed with (among others) white, scale-like hairs. The radial joint is shorter than the cubital, and has its fore extremity, on the outer side, produced into a strong, curved, tolerably sharp-pointed apophysis; the point directed inwards.

The abdomen is oval, of a black hue, more or less thinly clothed with white hairs. A transverse, crescent-shaped band at the fore extremity of the upper part, and two oblique bands

on each side are of a pale hue and densely clothed with white squamose (or scale-like) hairs.

The female is usually paler coloured, and less distinctly marked than the male, and her falcies are not developed like those of that sex, being short and vortical.

This is the spider usually alluded to in popular language by the term of "jumping spider;" it is abundant and generally dispersed throughout Great Britain, being found on walls, in the cracks and crevices of which it dwells. It comes out to seek its prey in bright sunshine, in whose rays its hairy clothing often reflects metallic tints.

EPIBLEMUM CINGULATUM.

ARANEA CINGULATA, *Panzer*, Faun. Ins. Germ., p. 40, 22.

SALTICUS SCENICUS, *Blackw.*, Spid. Great Brit. and Irel. (in part).

CALLIETHERA SCENICA, *C. L. Koch.*, Dio Arachn., p. 37, tab. 439, fig. 1106, 1107.

SALTICUS SCENICUS, *C. L. Koch.*, *Cambr.*, Zoologist 1863, p. 8597.

This spider, both in size, form, colours, and general appearance very closely resembles the preceding, to which it is nearly allied. It may, however, be distinguished without difficulty, in both sexes, by the abdominal pattern; in the present spider the lateral white bands on the abdomen are broader, and along the middle of the upper part is a more or less distinctly marked series of angular white bars, which give it a more striped appearance than that of *Epiblemum scenicum*, Clerck. The male is easily distinguished by the form of the apophysis at the outer extremity of the radial joints of the palpi; this, instead of being rather sharp-pointed and curved, is nearly straight, and obtuse at its extremity. The two species were evidently confused together by Mr. Blackwall, among whose typical examples of his *Salticus scenicus* I have detected both of them.

This spider is far less abundant than *Epiblemum scenicum*, and is usually (in my own experience almost invariably) found on old posts and palings, whereas *Epiblemum scenicum* is seldom found,

excepting on walls. It appears to be generally distributed throughout England, Wales, and Scotland.

PIBLEMUM AFFINITATUM.

SALTICUS AFFINITATUS, *Cambr.*, Trans. Linn. Soc. xxvii., p. 399.

The length of the male is 1-8th of an inch.

This spider is very nearly allied to both the foregoing, but perhaps most nearly to *Epiblemum scenicum*, Clerck. It is, however, much smaller, though this may not be a constant difference, inasmuch as adults of both the preceding species differ considerably in size, at times.

The apophysis at the outer extremity of the radial joint of the male palpus is not so long as that of *Epiblemum cingulatum*, but is rather more curved and less obtusely pointed; while it is less curved and much less sharply pointed than that of *Epiblemum scenicum*.

A single example only has yet been met with. It was found among heather at Bloxworth in the summer of 1860. This example has been compared with various specimens of the genus from Sweden and France; but although M. Simon, who has examined the type specimen, believes it to be identical with the *Calliethera mutabilis*, Lucas (an Algerian spider), found also in France and Corsica, I am not yet convinced of the identity of the two species.

GENUS HELIOPHANUS, *C. L. Koch.* SALTICUS, *Blackw.*,
in part.

In this genus the cephalo-thorax is less elongate, as well as less flattened, and the thoracic region is also broader than that of *Epiblemum*. The ocular area is broader than long, and there is rather more difference in the length of the legs, which are relatively 4.1.2.3, those of the third pair being, however, sometimes longer than those of the second.

The spiders of this group are of very similar general appearance. All are, more or less, black or deep bottle-green,

and shining with metallic brilliancy, but not thickly clothed with hairs. The males may be distinguished at once by a strong spur-like apophysis springing from the humeral joint of the palpus; this apophysis is differently formed in different species, and furnishes an unfailing criterion for the distinction of the species. Their habitat is usually under stones and other such shelter, but the males are found in bright sunshine actively traversing low plants and bushes in search of their prey. About twenty species are at present known in Europe, but three only are found in Great Britain, and all three have been met with in Dorsetshire.

HELIOPHANUS CUPREUS.

SALTICUS CUPREUS, *Walck., Blackw.*, Spid. Great Brit. and Irel., p. 57, pl. iii., fig. 31 (in part).

The length of the male is about two lines, and the female is rather larger.

The colour of the cephalo-thorax of the male is very deep black-brown, but quite black and tinged with greenish on the caput; the margins, as well as an indistinct transverse line behind the eyes, being clothed with white hairs. The legs are brownish-yellow, or yellow, longitudinally striped (excepting the metatarsi) with black; the pale portions in front being clothed with white squamoso hairs. The maxillæ have a strong bifid protuberance near the extremity on the outer side, a peculiarity not observable in the female.

The palpi are blackish-brown with a stripe of white squamoso hairs in front; the humeral apophysis is strong, perpendicular, very broad at the base, but tapering quickly to a rather sharpish curved point, which has a somewhat hooked appearance from some points of view. The radial joint is much smaller than the cubital, with a slender, tapering, curved apophysis at its outer extremity, and another more curved underneath. The digital joint is rather long, and of a narrow oval, or oblong, form; the palpal organs consist of a large, prominent bulb, the inner side

of the base of which is of a globular form, much projecting inwards and backwards; and at its fore extremity on the outer side is a strong curved, tapering, sharp-pointed spine, whose point is concealed beneath the fore extremity of the digital joint.

The falces are moderate in length and strength, straight, vertical, and considerably overhung by the fore extremity of the cephalo-thorax.

The abdomen is shining greenish-black, clothed with slightly golden greenish-yellow hairs. The fore part of the upper side has a marginal curved line formed by white hairs, continued on each side backwards for some distance; four similar spots form a large quadrate figure near the middle, with sometimes another spot on each side near the base of the spinners.

These spots and markings are very liable to obliteration in the male by the white hairs being rubbed off. The female is lighter coloured than the male, and her palpi are yellow.

This is an abundant spider in some parts of Dorsetshire, especially in the Island of Portland, in the months of June and July, where it may be found actively jumping about on low plants and herbage in bright sunny weather. It appears to be widely distributed in Great Britain.

The figures in Mr. Blackwall's work are certainly of this species, as also is the description of the female; but the description of the male is undoubtedly of another species, most probably of *Heliophanus flavipes*, Koch.

HELIOPHANUS EXPERS.

SALTICUS EXPERS, *Cambr.*, Trans. Linn. Soc. xxvii., p. 401, pl. liv., No. 5.

HELIOPHANUS EXPERS, *Sim.*, Monogr. des Attides d'Europe, p. 232.

This spider is rather larger than *Heliophanus cupreus*, the male measuring $2\frac{1}{4}$ lines in length.

The cephalo-thorax is black, sparingly clothed with short greenish-yellow hairs, and behind each of the two posterior eyes is a spot of white hairs.

The legs are dark black-brown, the tarsi pale whitish-yellow; the metatarsi also of the first and second pairs are light coloured. Their relative length is 1.4.2.3, and they are furnished with hairs, with a few fine spines on the metatarsi of the third and fourth pairs.

The palpi are similar in colour to the legs, with white squamose hairs on the upper side. The apophysis beneath the humeral joint is long, strong, nearly vortical, and curved inwards towards its extremity, which is bifid. The outer or hinder limb of the bifid portion is rather the longest, nearly straight, and the inner one the stoutest and recurved. The radial joint has a small, sharp, curved, spiny process on its outer side, and is slightly produced on its under side. The digital joint is long and narrow; the palpal organs are simple, and project in an irregular form backwards beneath the radial joint, with a straight, prominent, pointed process directed backwards on the inner side of their base.

The abdomen is black, sparingly clothed with short, greenish golden-yellow hairs. The fore extremity of the upper side is margined with a band of white squamose hairs; and on either side of the central line of the fore half is a broken, rather ragged, longitudinal band of similar hairs, each followed by a short one near the spinners; and at the hinder extremity of the under side, near the spinners, are two similar white spots in a transverse line.

A single example of this very distinct species, found some years ago at Bloxworth, still remains unique as British. An example is recorded from Paris by M. Simon. It may easily be distinguished from *Heliophanus cupreus* by its unstriped legs, and the bifid termination of the apophysis on the humeral joint of the palpus.

HELIOPHANUS FLAVIPES.

HELIOPHANUS FLAVIPES, *C. L. Koch.*, *Dio Arachn*, Bd. xiv., p. 64.,

Tab. 477, figs. 1320 and 1321.

SALTICUS FLAVIPES, *Cambr.*, *Trans. Linn. Soc.*, xxvii., p. 403.

The length of the male is from rather more than $1\frac{1}{2}$ to a little over 2 lines, and the female is a little larger than the male.

This is a rather smaller and stouter built spider than *Heliophanus expers*, and may be distinguished at once by the absence of white spots or other markings on the abdomen, which is dull black, clothed pretty thickly with dull greenish golden hairs. The humeral apophysis of the male palpus is bifid at its extremity; the anterior limb of the bifid portion is the longest, the hinder one rather divergent. The palpi are black-brown with white hairs in front. The cephalo-thorax is black, clothed with greenish-yellow hairs.

The legs of the male are yellow-brown; the femora more or less distinctly striped with longitudinal black stripes and markings, sometimes entirely suffused with black, and occasionally the tibiae are similarly striped or suffused.

The female resembles the male, excepting that the legs and palpi are yellow and unicolorous.

Although nearly allied to *H. cupreus* this spider may be readily distinguished from that species by the unicolorous legs of the female, and the bifid termination of the humeral apophysis of the male palpus, as well as by its plainer and yellower appearance. It is found occasionally among low plants and herbage in woods, and on heaths and waste grounds at Bloxworth in the months of June and July, but it cannot be said to be a common spider. I have also met with it near Brighton, and Mr. Blackwall has found it in Wales. It has likewise been sent to me from several other parts of England.

GENUS BALLUS, *C. L. Koch*. SALTICUS, *Blackw.*, in part.

The genus *Ballus* may be distinguished by its broad, flattened form. The cephalo-thorax and abdomen fit closely one up to the other; the latter being broad and truncated at its fore extremity. The caput and thorax are of equal size, the ocular area large, occupying the whole upper surface of the former. The integument of the abdomen (particularly of the male) is of a somewhat coriaceous nature. The legs are short; their relative length 4.1.2.3., and those of the first pair in the male much the strongest, especially the femoral and tibial joints. Spines are found only on the first and second pairs.

The spiders of this group are often pretty active, though they leap but little. Five species only are found in Europe, of these one only is known, as yet, to be indigenous to Britain, and that one is tolerably abundant in Dorsetshire.

BALLUS DEPRESSUS.

SALTICUS DEPRESSUS, *Walck.*, Ins. Apt. 1, p. 469.

„ OBSCURUS, *Blackw.*, Spid. Great Brit. and Irel., p. 53,
pl. iii., fig. 28.

The male measures 1-8th of an inch in length, and the female is rather larger.

The cephalo-thorax is short, broad, and flattened. The lateral edges of the upper surface of the caput are rather sharp, and the sides perpendicular. The colour is a dark, blackish, chocolate red-brown, pretty thickly clothed with short greyish-white hairs. The ocular area is broader than long, and its anterior side is narrower than the posterior.

The legs are short, those of the first pair are of inordinate strength, chiefly, however, in the femora, genera, and tibiae. The colour of these joints is yellowish red-brown, the tibiae much the darkest, the metatarsi and tarsi pale yellowish. The other legs are pale, brownish-yellow, often tinged with reddish

marked with one or two black annuli, and an oblique black line on the outer side of the femoral and genual joints.

The palpi are dark red-brown. The radial joint is shorter and smaller than the cubital, and has a small, pointed, prominent apophysis at its extremity on the outer side. The digital joint is large, and oval in form; the palpal organs are large and prominent, especially at their base, and at their outer extremity is a circularly curved black spine.

The falces are small, rather directed backwards, and of a yellow-red colour.

The abdomen is short, broad, flattened, and truncated in front, fitting closely over the base of the cephalo-thorax. The upper surface is of a coriaceous nature, thickly marked with minute punctures; it is of a deep chocolate red-brown colour, thinly clothed with hairs. A broadish, longitudinal, central band, of a deeper hue, enlarging and somewhat dentated or bifid towards its hinder part, is sometimes discernible.

The female is very different in colours and markings from the male, and at first it is not easy to recognise it as the female sex of the male above described. The cephalo-thorax is thickly clothed with yellowish-white pubescence, and the caput is marked with an indistinct, longitudinal and transverse dark lines. The legs are very short, of a pale yellowish-white, with the black lines and annuli more numerous and more distinct than in the male. The abdomen is red-brown, clothed with whitish pubescence; the fore part of the upper side has a longitudinal, central, dark brown band, followed by a paler central portion marked with several small angular bars. The humeral and cubital joints of the palpi are black, and the radial and digital joints yellow.

This sex is of even a more dumpy form than the male, owing to the larger size of the abdomen in comparison with the cephalo-thorax.

Ballus depressus is by no means a rare spider on underwood, and on the lower boughs of oak trees in woods, at Bloxworth, in the summer months; and has occurred also in other parts of

England, it can hardly be mistaken for any other known indigenous species of this family.

GENUS NEON, *Sim.* SALTICUS, *Blackw.*, in part., and
EUOPHRYS, *C. L. Koch.*, *Cambr.*, in part.

In this genus, which is allied tolerably closely to *Ballus* in the form of the cephalo-thorax and other characters, the caput is distinctly longer than the thorax, and the whole cephalo-thorax somewhat flattened. The legs are short—4.1.3.2. Those of the first pair are the strongest, and there are no spines on those of the hinder pairs.

The spiders of this genus are very small, and bear great resemblance in colours and markings to some of the genus *Euophrys*, from which, however, they may be readily distinguished by the more elevated cephalo-thorax, and shorter caput of the latter genus.

One species only has been met with in Britain, that one being also found in Dorsetshire.

NEON RETICULATUS.

SALTICUS RETICULATUS, *Blackw.*, Spid. Great Brit. and Irel., p.
60, pl. iii., fig. 33.

EUOPHRYS RETICULATUS, *Cambr.*, Trans. Linn. Soc. xxx., p. 333.

The length of the male is 1-10th of an inch, and that of the female but very little more.

This spider bears a good deal of resemblance to *Euophrys frontalis*, *Walck.*, so much so that in very young examples it is not easy to separate the two merely by their colours and markings. It is, however, a smaller and more robustly-made spider, and of a duller colour; the yellowish parts have an olive-greenish hue, and the black lines and markings are finer, more numerous, and give a reticulated appearance to the abdomen, by the breaking up of the yellowish ground-colour into small spots. The caput is rather longer than the thorax, and of the same colour, not black or deep-brown as in *Euophrys frontalis*; but the

lateral eyes of the front row, and those of the middle and hinder rows, are placed on largish black patches. The hinder slope of the cephalo-thorax is very abrupt.

The legs are pale yellowish-brown, indistinctly annulated and marked with blackish-brown. They are not very unequal in length, their relative length being 4.3.1.2., 3 and 1 differing but little. In some examples the femora, tibiæ, and metatarsi of the first pair are blackish, and the tarsi dull whitish-yellow.

The palpi of the male are short, and similar in colour to the legs. The radial joint has a small apophysis at its outer extremity, and numerous long hairs on its inner side. The digital joint is large, and the palpal organs well developed and prominent, but simple in structure.

The abdomen projects considerably over the base of the cephalo-thorax; it is of a dull brownish-yellow hue, thickly streaked and marked with black or black-brown, and with a series of strong, angular, black bars along the middle of the hinder half; these are not nearly so much of an arrow-head form as those of *Euophrys frontalis*, and the sharp anterior point of each is quite distinctly separated from the inside of that in front of it; whereas in *Euophrys frontalis* they run into each other. In the present spider the intervals between the black angular bars form very distinct, but fine, yellowish-brown ones.

Neon reticulatus is found in spring and summer, at Bloxworth, among moss and dead leaves in woods, as well as among heather on Bloxworth heath. It also occurs under stones and pieces of rock in the Island of Portland; and I have met with it in some other parts, also, of Dorsetshire; and it has been found in North Wales and Scotland. It is far less active than *Euophrys frontalis*, indeed, I do not remember ever to have seen the male hunting over plants and herbage in sunshine like males of that species.

GENUS EUOPHRYS, *C. L. Koch*. SALTICUS, *Blackw.*, in part.

In this genus the cephalo-thorax is longer, and deeper (or more elevated) than that of either *Ballus* or *Neon*, the thoracic

region being broad and longer than the caput. The relative length of the legs is 4.3.1.2. or 4.1.3.2.; those of the first pair are very rarely the longest.

The ocular area is broader than long, but scarcely differs in the breadth of its fore and hind extremities. Falces small; legs short; those of the male stoutest.

The distinction between *Euophrys* and the next genus (*Attus*) appears to be but slight.

The European species of this genus are rather numerous, but three only have hitherto been recorded in Great Britain.

EUOPHRYS FRONTALIS.

ATTUS FRONTALIS, *Walek.*, Ins. Apt., tom. 1, p. 415, and *C. L. Koch.*, die Arachn. Bd. xiv., p. 44, Tab. 1304-5.

SALTICUS FRONTALIS, *Blackw.*, Spid. Great Brit. and Irel., p. 52, pl. iii., fig. 27.

The length of the male is $1\frac{3}{4}$ lines, and that of the female 2 to $2\frac{1}{4}$ lines.

The profile of the upper part of the caput slopes a little forward in a slightly curving line. The cephalo-thorax of the male is yellowish-brown, the ocular area black or blackish-brown, clothed with orange-brown hairs, and the eyes of the anterior row are each encircled by an iris of red hairs.

The legs are brownish-yellow, excepting those of the first pair, which are much the strongest, and of a deep brown colour, the tarsi being white, and clothed thickly beneath the tibiae and metatarsi with longish, coarse, bristly, black hairs. The spines are neither very numerous nor conspicuous.

The palpi are rather short; the humeral joint is black-brown; the cubital and radial joints yellow-brown, clothed above with coarse, but conspicuous, white hairs; those of the latter joint are much the longest, and project over the digital joint, which is yellow-brown and of moderate size. The palpal organs are

prominent, and at their extremity is a circularly-curved slender spine.

The abdomen is oval, of a yellow-brown, or brownish-yellow colour. Along the middle of the fore part of the upper side is a slightly dentated black band, followed to the spinners by a series of triangular or arrow-head markings, the sharp apex of each of which run into the hinder part of the one in front of it. On each side of these, as well as on the sides of the abdomen, are numerous, rather regularly, disposed, oblique, as well as longitudinal and linear spots and markings. The under side has three longitudinal, parallel, brownish-black bands, often obscure, at times almost confluent, and sometimes obsolete. In some examples the dark markings of the abdomen almost obliterate the ground colour.

The female resembles the male, but is usually lighter coloured, and the abdominal dark markings are less crowded and more distinct; her anterior legs are also less strong than those of the male, and similar in colour to the rest.

This is by no means a rare spider, being found in many parts of England, Scotland, and Wales, under stones, among moss in woods, and on wastes. The males, which are exceedingly active, may be found running in sunshine on low plants and herbage in open places in woods as well as on heaths and waste grounds at Bloxworth in the months of May, June, and July. I have met with it, also, in tolerable abundance in the Isle of Portland. The male is a very pretty and conspicuous little spider; the black caput, contrasted with its red irides, white anterior tarsi, and white fringe on the palpi, render it an easily seen species, but from its activity it is not so easily captured. The females are comparatively sluggish.

EUOPHRYS ÆQUIPES.

SALTICUS ÆQUIPES, *Cambr.*, Trans. Linn. Soc. xxvii., p. 399, pl. 54, No. 4.

The male measures 1-10th of an inch in length (often less), and the female is rather larger.

In this little spider the caput and thorax appear to be very nearly of equal length, the latter perhaps slightly the longest. The upper side of the caput is black, clothed with yellowish and black bristly hairs, the black colour (in the male) prolonged behind into a tapering deep brown band along the middle of the thorax. The lateral margins are black, the sides and hinder part yellow-brown, often tinged with reddish, and with a more or less distinct, longitudinal, lateral, blackish band on each side, enlarging behind, and generally becoming confluent with the central tapering one.

The legs are short, but there is not much difference in their length, which is, relatively, 4.3.1.2. They are of a pale yellowish colour, distinctly annulated with black; the annuli on the first pair are generally more or less confluent, especially on the femoral joints.

The palpi are short, and of a yellow hue; the digital joint large, and the palpal organs prominent, but simple in structure. The radial joint is fringed above with long hairs, and has a small pointed apophysis at its extremity on the outer side.

The sternum is yellow, margined with black.

The abdomen is of a short-oval form, thickly clothed with yellowish hairs; its colour is blackish, or brownish-black above, with some longitudinal, parallel, yellowish markings on the middle of the fore-part, followed to the spinners by a series of angular lines of the same colour. The sides are yellowish, thickly marked with short black lines and markings; and the underside is also yellowish, with three more or less distinct black-brown longitudinal bands. In the male the yellow markings on the upper side are often more or less obsolete, the whole being black, or nearly so. The female is usually paler, and more distinctly marked than the male.

This little spider is very active, and is not unfrequent in June and July, on the sunny slopes near Pennsylvania Castle, Portland, hopping about among the short grass and herbage. I have also found it on the Chesil Beach. It has a wide range in England. I have received it from the neighbourhood of Glas-

gow, and have found it rather abundantly on the downs near the sea between Brighton and Rottingdean. The distinctly annulated legs will serve to distinguish it at once from *Neon reticulatus*, Blackw.

EUOPHRYS PETRENSIS.

EUOPHRYS PETRENSIS, *C. L. Koch.*, die Arachn., Bd. xiv., p. 49, pl. cccclxxv., fig. 1307.

SALTICUS COCCOCILIATUS, *Cambr.*, Zool. 1863, p. 8562.

The length of the male is 1-10th of an inch, and the female is a little larger.

The upper part of the caput of the male is black, continued backwards in a tapering form to the hinder margin of the thorax; and it is thinly clothed with blackish and golden-coppery hairs. The sides and hinder part are reddish yellow-brown, clothed with yellowish hairs, and with a broad (often indistinctly defined), dark, brownish-black, marginal band. The eyes of the anterior row are encircled by irides of bright scarlet hairs, and the clypeus is also clothed with similar ones.

The legs are strong and of moderate length; those of the first and second pairs are black, with yellowish-brown tarsi and metatarsi; the others have the femora black, and the tibiæ, tarsi, and metatarsi distinctly annulated with black and yellowish.

The sternum is black or blackish-brown.

The palpi are short and of a yellow-brown hue. The radial joint is shorter and smaller than the cubital, and has, in front, a compact fringe of long, shining, white hairs, covering the base of the digital joint, which is large, and dark brown or blackish in colour. The palpal organs are prominent, but not complex in structure, with a strong black spine curved in a circular form at their extremity.

The abdomen is of a short-oval form, and does not project much over the base of the cephalo-thorax. It is black,

clothed with coarse black and golden coppery hairs; along the hinder half of the upper side may often be traced a series of angular lines (generally defective in the middle or angular part) formed by coppery-red hairs. In some examples these lines appear to be connected by other short lines, forming two longitudinal, parallel, dentated lines along the middle.

The female is not quite so dark coloured as the male; her legs are more distinctly annulated, and the palpi are of a clear, pale, yellow hue; the anterior eyes and clypeus also are wanting in the scarlet irides and hairs, and the angular lines on the abdomen are more distinct than in the male.

This pretty little spider is allied to *Euophrys equipes*, but may be easily distinguished by its darker colours, and (in the males) by the striking contrast of the scarlet irides, and similarly coloured hairs on the clypeus, with the white hairs on the dark coloured palpi.

Euophrys petrensis is not unfrequent in May and June on the barer spots of dry sandy and gravelly heath at Bloxworth, where the heather is scanty, but has not yet been found in any other locality in Great Britain. Its activity is very great, and, like many others of its family, it loves sunshine, becoming at once dull and sluggish on the obscuration of the sun's rays. It appears to prey (among, no doubt, other insects) upon ants and poduræ, both of which are common where this spider occurs. The female produces only a very few eggs, which she encloses, along with herself, in a little white silken nest beneath a stone.

GENUS *ATTUS*, *Sim.*, *ATTUS*, *Walch.* (in part), and
SALTICUS, *Blackw.* (in part).

The spiders of this group may be distinguished from *Euophrys* by the more elevated cephalo-thorax, and the greater proportionate length of the legs of the fourth pair. The thorax is from a quarter to a half longer than the caput, and the ocular area is scarcely a quarter more in breadth than in length, but is rather

narrower behind than in front. The upper surface of the caput slopes, often rather strongly, forwards, with a slightly convex profile. In some species the length of the second pair of legs exceeds that of the third. The species of this genus, recorded as European, are rather numerous; four only of these, however, are as yet known in Great Britain, though several others, whose genuine position is doubtful, are at present included in *Attus* as a kind of refuge for the destitute. Two species only have hitherto been found in Dorset.

ATTUS PUBESCENS.

ARANEA PUBESCENS, *Fabr.*, *Syst. Ent.*, p. 438.

EUOPHRYA PUBESCENS, *C. L. Koch.*, *Die Arachn.*, Bd. xiv., p. 9.
tab. 470, figs. 1278 and 1279.

SALTICUS SPARSUS, *Blackw.*, *Spid. Great Brit. and Irel.*, p. 49, pl.
iii., fig. 25.

„ *TEREBRATUS*, *Cambr.*, *Zoologist* 1863, p. 8597.

„ *PRATINCOLA*, *Cambr.*, *Trans. Linn. Soc.* xxvii., p. 403.

ATTUS PUBESCENS, *Cambr.*, *Trans. Linn. Soc.* xxx., p. 333.

The length of the male is 2 lines, and the female is rather larger.

The cephalo-thorax is dark brown, tinged with yellow, the ocular area nearly black; it is thickly clothed with grey and greyish-yellow pubescence, mixed with reddish and other hairs, and has several spots and markings on the upper side of the caput formed by white hairs, giving it a variegated appearance. The hairs forming the irides of the anterior row of eyes are greyish.

The legs are yellow-brown, more or less distinctly marked and annulated with brownish-black. Those of the fourth pair are considerably the largest, and the third pair are at least equal

to the second, if not slightly longer; they are well clothed with grey and other hairs, and all are furnished with spines.

The palpi of the male are moderate in length, strong, of a yellowish-brown colour, thickly clothed with grey and other hairs; the radial joint has a remarkable apophysis of deep black-brown colour springing from near the base on the outer side; it is of large size, broad, more than double the length of the joint, and broadest near its extremity; the radial joint is also thickly furnished with long coarse grey hairs, especially on the inner side. The digital joint is large and of a black-brown colour; the palpal organs large and prominent, but not complex in structure.

The abdomen does not project much over the base of the cephalo-thorax; it is thickly clothed on the upper part and sides with brown, grey, white, yellowish, reddish, and black hairs, forming numerous spots and markings, and giving it a very prettily variegated look. Among the most conspicuous of the paler markings, in well-marked examples, are two longitudinal rows, each of four roundish white spots diverging as they run backwards from the fore extremity to the hinder part. The second spot from the hinder extremity on each side is larger, and always more conspicuous than the rest; and there is another white spot immediately above the spinners. Along the middle of the hinder half is a series of yellowish-grey, transverse, angular lines, the intermediate spaces being black. The under side is of a uniform greyish yellow-brown hue.

The males and females differ but little in colours and markings, though both sexes are very variable in general depth of colouring, as well as in distinctness of pattern. A very dark, nearly black, variety constitutes the *Salticus sparsus*, Blackw.

This spider occurs, though very rarely, on walls at Bloxworth and in the neighbourhood, and is adult in May and June. I met with it once rather plentifully on the walls of a house at Hursley, in Hampshire, as well as in the suburbs of Southampton, and it has been also found in various other parts of England. The males cannot possibly be mistaken for any other species if the

apophysis at the outer side of the radial joint of the palpus be noted.

ATTUS SALTATOR.

SALTICUS SALTATOR, *Cambr.*, Trans. Linn. Soc. xxvii., p. 401, pl. 54., No. 6, and Zoologist 1862, p. 7945.

ATTUS SALTATOR, *Sim.*, Monogr. des Attides d'Europe, p. 145, and Arachn. de France, tom. iii., p. 115.

SALTICUS FLORICOLA, *Blackw.*, Spid. Gt. Brit. and Irel., p. 55, pl. iii., fig. 30.

YLLENUS SALTATOR, *Cambr.*, Trans. Linn. Soc. xxx., p. 334.

The male measures 1-9th to 1-10th of an inch in length, and the female is rather larger.

The cephalo-thorax is very massive, and the caput and thorax are more nearly equal in length than those of *A. pubescence*. It is clothed with hairs, and its colour is deep brown on the sides and hinderpart, where the hairs are mostly white; the ocular area is black, clothed with reddish-brown and other hairs, and has on the hinder part a central longitudinal stripe of white hairs continued backwards on the thoracic region.

The hairs forming the irides of the eyes of the anterior row, as well as those on the clypeus are white, the former being sometimes of a reddish hue round the two large central eyes.

The legs are rather unequal in length; relatively 4.1.2.3. Those of the fourth pair are considerably the longest, particularly in the femoral joints. They are of a dull brownish-yellow colour, annulated with dark brown, and clothed with, among others, short white hairs or pubescence.

The palpi of the male are of a pale yellowish hue, thickly clothed in front with longish white hairs. The radial joint has,

at its extremity on the outer side, a small pointed apophysis. The digital joint is of moderate size, and of a brownish colour. The palpal organs are prominent at the base, but of simple structure.

The abdomen is of a short-oval form, projecting well over the base of the cephalo-thorax, densely clothed with reddish-brown, black, and white hairs; the upper side is of a more or less deep brown or blackish hue, with a longitudinal central white line in front, followed by a series of angular whitish bars; and on each side, a little behind the middle, is a large conspicuous roundish white spot or blotch. The sides are white, and the under part greyish yellow.

The sexes resemble each other in their general colour and pattern; but the males are the most distinctly marked, and darkest in the dark portions. The two white blotches, also, on the abdomen of the male are very distinct; while in the females the angular bars are more distinct than in the male.

This exceedingly active and pretty little spider is not uncommon in May and June on the dry, sandy, gravelly parts of Bloxworth Heath. I have also met with it on the sand-hills near Studland. Its leaps are, compared to its size, of extraordinary length—often exceeding a space of ten inches. No doubt the length of its hinder legs enables it to cover this large distance.

Its colours are admirably adapted for concealment among the small white particles of stone which abound on the darker soil of the sandy heath, where it occurs; but the two large white spots on the nearly black abdomen of the male render it conspicuous to the collector's eye. The only way to capture it without injury is either with a hoop-net, guiding or driving it in with one hand while the net is held in the other, or else to cover it dexterously with an empty tube, into the upper part of which it may be soon driven, and thence transferred to the spirit-bottle, as recommended in the "Introduction." (p. xxxix.)

I met with a single example of this spider in Lancashire many years ago, and more recently it has been found in France

GENUS HASARIUS, *Sim.* SALTICUS, *Blackw.*, in part.
and ATTUS, *Cambr.*, in part.

In this group the cephalo-thorax is of moderate length in proportion to its breadth but massive and elevated. The thorax is about one-half longer than the caput, and distinctly broader, though there is little or no evident mark of division between them. The ocular area is much broader than long, and very slightly narrower behind than in front. The legs are strong, short, and do not differ much in length; relatively, they vary both in different species as well as in the sexes of the male species. Commonly the relative length is 1.3.4.2. The falcies are of moderate length and strength.

Three species only have been found hitherto in Great Britain; of these, one is most probably an introduced tropical spider; and one only has as yet been met with in Dorsetshire.

HASARIUS FALCATUS.

ARANEUS FALCATUS, *Clerck.*, Sv. Spindl., p. 125, pl. 5, tab. 19.

SALTICUS CORONATUS, *Blackw.*, Spid. Great Britain and Irel., p. 50, pl. iii., fig. 26.

The male measures about $2\frac{3}{4}$ lines in length, and the female often attains a length of $3\frac{1}{2}$ lines.

The cephalo-thorax is of a deep brown colour, dotted with greyish yellow-brown hairs; the ocular area is black and surrounded by a broad, pale band (interrupted in the middle), and clothed with short white hairs.

The legs are yellowish, or yellow-brown, the anterior portions of the femora and tibiæ deep brown. They are much darker in some examples than in others, and are clothed with (among others) numerous greyish-white hairs, and all are furnished with spines.

The palpi of the male are short, strong, and of a dark, yellow-brown colour, clothed in front with coarsish-grey and other hairs. The radial is rather larger than the cubital joint, and

has, at its outer extremity, a long, obtusely-pointed, deep blackish apophysis, which fits closely up against the outer side of the base of the digital joint; this last is large, and of an oval shape. The palpal organs are large, and very prominent behind, but of simple structure.

The abdomen of the male is oval, but does not project much over the base of the cephalo-thorax; it is of a deep, blackish, olive-brown colour above, with a yellowish-white marginal band; a broad, central, longitudinal one of a reddish-brown colour, contains, on the hinder part, a series of more or less distinct angular, pale, yellowish-brown bars, of which one (a little way above the spinners) is longer than the rest, and its ends form, on each side of the central band, a strong, denticulation. This denticulation is often very distinct when the rest of the bar is scarcely traceable, and at other times the bar forms a large triangular yellowish-white area. The sides are deep, blackish-brown, obscurely striated with yellow-brown, and the under part is either dark brown, or pale yellow-brown, longitudinally striped or banded with dark brown.

The sexes are very dissimilar in general appearance; the abdomen of the female wants the conspicuous yellow-white, marginal border of that of the male. Its colours and markings vary considerably; in general the upper side is dark olive-brown, with some indistinct angular bars along the middle, and the sides are obliquely marked with alternate yellowish and dark-brown, but not very distinct bands or stripes. Both sexes may easily be distinguished from any other known British species of *Salicoides* by the broad pale band surrounding the ocular area.

This fine and handsome species is not rare in wooded districts at Bloxworth and other parts of Dorset. The males may be found actively hopping about on bright mornings in May and June, among dead leaves and herbage in open places in woods; and the females may be beaten from underwood, as well as from the lower boughs of oak trees growing amongst it. Adults of both sexes may occasionally be found throughout the summer.

Hasarius falcatus is also found in Wales and Scotland, as well as in numerous parts of England.

GENUS PHLEGRA, *Sim.* SALTICUS, *Blackw.* in part, and
ÆLUROPS, *Cambr.*

The spiders of this group may be distinguished from *Hasarius* by the longer, narrower, and less elevated cephalo-thorax (of which the thoracic portion is double the length of the caput) and the different relative length of the legs 4.3.1.2. or 4.1.3.2.

The almost invariable pattern in this genus consists of alternate, longitudinal, pale and dark stripes, both on the cephalo-thorax and the abdomen.

Out of several recorded European species of this group one only has as yet occurred in Great Britain, and this one has only hitherto been found in Hampshire and Dorsetshire.

PHLEGRA FASCIATA.

SALTICUS FASCIATUS, *Hahn.*, die Arachn., Bd. 1, p. 54, Tab. xiv.,
fig. 41.

„ „ *Cambr.*, Zool. 1862, p. 7945.

ÆLUROPS FASCIATUS, *Ibid.*, Trans. Linn. Soc. xxx., p. 333.

ATTUS FASCIATUS, *Ibid.*, Ann. and Mag. N. H., October, 1875,
Sec. 4, Vol. 16, p. 258.

The length of the male is rather more than $2\frac{1}{2}$ lines, and that of the female about 4 lines.

The cephalo-thorax is of a deep reddish-brown hue, the ocular area being black. Two rather narrow, longitudinal stripes, of a yellow-brown colour, clothed with grey or whitish hairs, run backwards, one from just on the inner side of each of the posterior eyes, to the hinder margin of the thorax; and there is a similar, lateral, marginal band on each side. The ocular area is also divided longitudinally by a whitish line, and is broader than long, but not greatly so.

The legs are short and strong, their relative length being 4.3.1.2. They are brownish, or dull yellow, annulated distinctly (at least in the female) with black or deep brown.

The palpi of the male are short, and of a dark reddish-brown colour; the radial joint has two apophyses (or rather a duplex one) at its outer extremity. The two portions of it are of equal length, and runs parallel close together, but differ in strength and form. The digital joint is of moderate size, and the palpal organs are large, and prominent, but of simple structure.

The abdomen of the female is black on the upper side, with a central and two lateral, longitudinal bands, clothed thickly with short white hairs. The under part is of a greyish-yellow hue.

The sexes resemble each other in their markings; but in their general appearance the two are very much unlike, owing to the greater or less obscuration, in the male, of the pale stripes both on the cephalo-thorax and abdomen, the latter is (in the male) of a shining, satiny or greasy look; the central, abdominal stripe is more or less visible, but often only on the hinder extremity; the lateral ones are usually altogether obsolete. The legs of the male are also of a very dark hue, destitute of any traceable annulation.

I met with this distinct and well marked species in tolerable abundance at the beginning of June, 1875, on a narrow neck of land or peninsula, thickly covered with dwarf flowers and herbage, near the railway station at Portland. It is an active spider, and has as yet only been found in one other British locality (a single example of the female, some years ago, in the New Forest, Hampshire).

GENUS *ÆLUROPS*, *Thor.* *SALTICUS*, *Blackw.*, in part,
and *YLLENUS*, *Cambr.*, in part. NON *ÆLUROPS*. *Ibid.*

The spiders of this group may be distinguished from *Phlegra* by the greater elevation (especially in proportion to its length) of the cephalo-thorax. The caput slopes very much forward

with a curved profile, and is only half the length of the thoracic portion. The legs are tolerably long; those of the first and second pairs are shortest and much the strongest. Their relative length is 3.4.1.2 (or 3-4.1.2), and all are armed with spines.

The anterior row of eyes is much curved; the two large central ones being situated quite underneath the overhanging fore part of the upper side of the caput, so that when looked at from above and behind they are quite concealed.

About eight species of *Ælurops* are as yet known in Europe, but one only has been found in Great Britain; that one (so far as I know) being confined to heaths in Dorsetshire and Hampshire.

ÆLUROPS V-INSIGNITUS.

ARANEUS LITERA V-INSIGNITUS, *Clerck.*, Sv. Spindl., p. 121.

ATTUS QUINQUEPARTITUS, *Walck.*, Ins. Aept., ii., p. 403.

SALTICUS QUINQUE PARTITUS, *Cambr.*, Zoologist 1862, p. 7945.

YLLENUS V-INSIGNITUS, *Cambr.*, Trans. Linn. Soc. xxx., p. 334.

SALTICUS NIDICOLENS, *Cambr.*, Zool. 1862, p. 7945.

The length of the male is $2\frac{2}{3}$ lines, and that of the female 4 lines.

The cephalo-thorax of the male is black, with a broad lateral margin clothed with white hairs, and at the fore part of the ocular area is a very distinct marking formed by white hairs in the form of a double V, the angle of which is directed forwards.

The legs are yellow-brown, marked (but not regularly) with dark brown, and clothed with (among others) numerous white hairs on the upper side, the femora of the first pair being of a pale yellowish hue.

The palpi are yellow, thickly clothed on the upper side with dull yellowish and white hairs. The radial joint has two short apophyses at its extremity on the outer and upper side, but not easily seen, owing to the hairs with which that part is clothed. The digital joint is of moderate size, and the palpal organs are of simple structure.

The abdomen is deep black on the upper side, with a pale, longitudinal, central, narrow band, thickly clothed with white hairs, and occasionally emitting, on each side towards its rather tapering hinder part, some short lateral, slightly oblique, lines or points. The sides are clothed with white hairs, and are marked, towards the hinder part, with several oblique lines of short blackish linear spots. The under side is dull yellow-brown.

The female differs considerably from the male—her general hue being much paler. The central band on the abdomen is indistinct and of a dull colour; its fore part is indicated by some longitudinal parallel pale spots, and it is studded, on each side of the hinder part, with obtuse, prominent, short, pale lines or spots. The sides are dull yellowish, marked with oblique rows of bold linear blackish spots. The legs and palpi are yellow, slightly tinged with reddish, and distinctly annulated with dark brown. The V mark on the caput in this sex is seldom very distinct, and often scarcely traceable.

This conspicuous spider, which cannot be mistaken for any other species of the family found in Britain, is of frequent occurrence on Bloxworth Heath, where it is found on dry sandy and gravelly spots in May and June, and occasionally throughout the summer. I have also received it from the heath district near Bournemouth. It is exceedingly active, and its leaps are of great extent, as well as very rapid in their succession. The female might easily be mistaken for a distinct species, so great is the difference in its general colours and markings from those of the male.





APPENDIX A.

*Descriptions of some Additional Species of Spiders
found in Dorsetshire since the publication of the
First Part of this Work.*

FAMILY DRASSIDES.

GENUS GNAPHOSA, Latr.

GNAPHOSA LUGUBRIS.

PYTHONISSA LUGUBRIS, *C. L. Koch*, Die Arachn. vi., p. 60, Taf. excv., fig. 473, and *L. Koch*, Die Arachn. Faun. der Drassiden, p. 8, tab. 1, fig. 4.

GNAPHOSA LUGUBRIS, *C. L. Koch*, *Cambr.*, Ann. and Mag. N.II. 85, vol. iv., 1879, p. 201.

Length of an adult female $5\frac{1}{2}$ lines.

This spider is larger than *Gnaphosa anglica*, *Cambr.* (p. 13), but resembles it very closely in general appearance, colours, and markings; the V-shaped marking, however, on the cephalothorax is stronger and more distinct. The metatarsi of the fourth pair of legs are also distinctly longer in proportion, and the form of the genital aperture is different. In *Gnaphosa anglica* the anterior margin extends backwards, in a strong process, over the greater portion of the length of the aperture, while a corresponding process in the present spider does not reach half-way

over its length. The scopula beneath the tarsi and metatarsi of the first two pairs of legs is also denser and more compact than in *Gnaphosa anglica*.

The example on which the above notes have been made was found, with numerous immature individuals of both sexes, under old turves on Bloxworth Heath, about the middle of September 1878. The immature males were, some of them, then quite equal in size to the female above described, and the digital joints were excessively tumid, showing a near approach to maturity.* All the adult examples I have hitherto met with of *Gnaphosa anglica* have been found in the months of May and June.

GNAPHOSA SUSPECTA.

GNAPHOSA SUSPECTA, *Cambr.*, Ann. and Mag. N. H., 1879, Vol. iv., s. 5, p. 191.

Length of an immature female 2 lines.

This spider is of a rather flatter form than *Gnaphosa anglica*. The legs are stronger, and the cephalo-thorax is devoid of the strong, dark, V-shaped marking characteristic of that species.

The colour of the cephalo-thorax is pale yellow-brown, thickly mottled and suffused with a deeper hue, and edged with a brown-black marginal line.

The legs are pale yellow-brown, more or less suffused with a darker colour. There are no spines, apparently, on those of the first two pairs, excepting two of a strong bristly nature on the upper sides of the femora. All the tibiae, tarsi, and metatarsi are furnished above with a few long, erect, slender hairs.

* Since the above description of the female was in the press, I have (May 21st, 1880) found an adult male of this fine spider under a piece of turf on Bloxworth Heath. Its length is $4\frac{1}{2}$ lines, and it is of a darker hue than any of the females I have as yet met with, the abdomen being jet black. The palpi, independently of the larger size of the spider, will serve to distinguish it readily from *Gnaphosa anglica*, *Cambr.*; the radial joint is very short and strong, obtusely prominent underneath at its fore extremity, and has its extremity on the outer side produced into a short, rapidly tapering, sharp-pointed apophysis, whose length is less than that of the joint itself, and its joint adheres closely to the digital joint as to render it not easily observed. In *Gnaphosa anglica* this apophysis is much longer (longer, in fact, than the joint itself), and more prominent. The palpal organs, also, are more prominent than in *Gnaphosa anglica*.

The relative length of the legs is 4.1.2.3, but the difference between those of the first and fourth pairs is slight.

The palpi, falces, and maxillæ are similar in colour to the legs; while the colour of the sternum is like that of the cephalo-thorax.

The eyes are very similar in general size and position to those of *Gnaphosa anglica*, but are more closely grouped together, and form a more rectangular area, whose transverse diameter is also shorter in proportion to the longitudinal.

The abdomen is rather broad, and of an oblong-oval form, truncate before; it is of a dull brown colour, the slightly reddish-yellow adpressed pubescence being mixed with longer, stronger, prominent, black, bristly hairs.

The example above described was found under a stone near Sherborne, in the spring of 1878, by my nephew, Frederick Octavius Pickard-Cambridge. Although owing to its not being adult, its best specific characters are not developed, I have ventured to describe it as a new species. It is, at any rate, distinct from *Gnaphosa anglica* and *Gnaphosa lugubris*, the only other British forms of the genus yet discovered.

GENUS PROSTHESIMA, *L. Koch.*

PROSTHESIMA LATITANS.

MELANOPHORA LATITANS, *L. Koch*, Beiträge Zur Kenntniss der Arachniden Fauna Galiziens, (Krakau., 1870).

PROSTHESIMA LATITANS, *L. Koch*, *E. Simon*, Arachn. de Franco iv., p. 70, and *Cambr.*, Ann. and Mag N. H., 1879, vol. iv., ser. 5, p. 209.

Adult male length slightly over $2\frac{1}{2}$ lines.

This species is closely allied to *Prosthesima petiverii*, Scop. (p. 15), but differs in being more completely jet-black, both in respect to the cephalo-thorax and abdomen, the former of which is of a very slightly brown tinge. The fore part of the abdomen

is covered with a large sub-triangular shining patch, marked towards the posterior extremity with two obscure red-brown impressed spots placed in a transverse line, and, like the rest of the abdominal surface, covered with a rather close pubescence, some of which appears to have a greyish tinge.

The legs are deep black-brown, the tarsi pale yellowish, those of the two hinder pairs tinged with red-brown; the femora of the first pair have no pale marking on their outer sides. Relative length 4.1.2.3.

The eyes of the hind-central pair are oval, slightly oblique and very nearly contiguous to each other, each being also but very little further removed from the lateral eye on each side next to it.

The radial apophysis is long, rather strong, tapering, curved, divergent from the digital joint at its extremity, which has its point of a somewhat bent or crotchet form; the digital joint is large and of a short oval shape; the palpal organs are obtusely prominent at their hinder extremity; towards their fore extremity is a prominent somewhat pointed process, ending with a small spine-like point; and in front of this, issuing from the outer side of the extremity of the palpal organs, is a black tapering spine, which curves over them towards the inner side, in close connection with some whitish membranous substance. There is no spine of this kind, nor any such prominent process as the one just before mentioned, in *Prothesima petiverii*.

A single example of this spider was found by myself near Lulworth Cove on the 26th of June, 1878.

PROSTHESIMA LATREILLII.

MELANOPHORA ATRA, *C. L. Koch*, Die Arachn., Fam. der Drasiden, p. 182, tab. vii., figs. 123 and 121.

PROSTHESIMA LATREILLII, *Sim.*, Arachn. de France iv., p. 62, and *Cambr. Ann. and Mag. N. H.*, 1879, ser. 5, vol. 4, p. 209.

Length of the male $2\frac{1}{2}$ lines, female $3\frac{1}{2}$ lines.

This spider is allied to *P. nigrita* (p. 16), but is larger, and the tarsi alone of the legs are paler than the other joints.

The cephalo-thorax is deep blackish-brown; the abdomen is of duller and more sooty hue with a somewhat coppery, black-brown, shining oval area at the fore extremity of the upper side of that of the male. The abdominal pubescence is of a somewhat yellowish dull olive-green hue. The legs are similar in colour to the cephalo-thorax, becoming, however, gradually paler towards their extremities, which are pale reddish-brown. The femora of the first pair, in both sexes, have an elongate-oval pale patch on their outer sides. Relative length 4.1.2.3.

The palpi are much like those of *P. nigrita*, but the digital joint is larger. The radial apophysis is moderately long and strong, tapering, curved, and divergent, its point is obtuse, but the extremity is rather abruptly diminished in size a little way from the point. The palpal organs are of very simple structure, not very prominent, and present no noticeable points or processes.

The female resembles the male in general character and colours. The genital aperture most nearly resembles that of *Prothesima longipes*, C. L. Koch, but its form is still noticeably distinct, being more quadrate and of a larger size.

A single example of each sex, found on Bloxworth Heath, in May, 1877, have been hitherto confused with *P. nigrita*; and in 1876 I received an adult female (length 3 $\frac{2}{3}$ rd lines) from Ventnor, in the Isle of Wight.

PROTHESIMA LONGIPES.

MELANOPHORA LONGIPES, C. L. Koch, Die. Arachn., Fam. der Prassiden, p. 147, pl. vi., figs. 88 and 89.

PROTHESIMA LONGIPES, C. L. Koch, Cambr., Ann. and Mag. N. H. ser. 5, vol. iv., p. 209.

Length of the male $2\frac{1}{2}$ to 3 lines. Female rather larger.

Although in general appearance this spider is very like, and is very likely to be mistaken for, some other species of this

genus, yet the much greater length and slenderness of the legs distinguish it readily.

The whole spider is of an almost jet black hue, the femora of the first pair of legs have on their outer sides a large, elongate, reddish yellow-brown marking in both sexes, and all the tarsi are red-brown.

The palpi are tolerably long. The radial apophysis is long, nearly straight, somewhat tapering, divergent from the digital joint, and has its extremity somewhat pinched into a sort of obtuse point. The digital joint is large, oval, and the palpal organs are very convexly prominent, but exhibit no very noticeable points or projecting processes.

The female resembles the male in colours, but her legs are not so long. The genital aperture, like that of most other spiders, has its own specially characteristic form and structure.

Adults of both sexes were found on Bloxworth Heath, among moss and heather, as well as under old turves, from the beginning to the middle of September, 1878. It is a remarkably active spider, and, unless captured by means of an empty glass tube, it is not easy to get undamaged specimens. It is found in Germany and France, but not in any abundance.

GENUS DRASSUS, *Walck.*

DRASSUS INFUSCATUS.

DRASSUS INFUSCATUS, *Westr.*, Aran. Suec. p. 347, and *Cambr.*, Ann. and Mag. N.H., 1379, Ser. 5., vol. iv., p. 209.

Length of the adult female $3\frac{3}{4}$ lines.

This spider is nearly allied to *Drassus criminalis*, *Cambr.* (antea p. 20). It is, however, rather larger, and though resembling that species in its general form, structure, and colours, it may be at once distinguished by the large size and high development of the genital aperture. This portion of structure discloses a large oblong-oval deep cavity, bordered on each side by a very broad,

somewhat irregularly shaped, shining, corneous-looking margin, and behind by a transversely rugulose integument, from the middle of the posterior margin of which a small point projects into the anterior portion of the cavity. In the form of the genital aperture, as well as in many other respects, it bears considerable resemblance to *Drassus troglodytes*, C. L. Koch (p. 17), but the "small point," just now mentioned as projecting into the cavity of the genital aperture, is (in *Drassus troglodytes*) a projection of large size, and covers the greater portion of the cavity.

It is just possible that *Drassus criminalis* may be merely the not quite fully developed form of *Drassus infuscatus*; though its genital aperture has the appearance of maturity. Future researches will probably make this more certain, while at present (and not knowing the males of either), I consider the two spiders to belong to distinct species.

An adult female of *Drassus infuscatus* was found by myself among dead leaves on the ground in a wood at Bloxworth on the 10th of September, 1877. It is found also in Sweden, Germany, Belgium and France, but appears to be everywhere exceedingly rare.

DRASSUS MINOR.

DRASSUS MINOR, *Cambr.*, Ann. and Mag. N. H., 1879, part. iv., ser. 5, p. 192, pl. xii., fig.

Cephalo-thorax elongato-oval; the lateral marginal constrictions at the caput are slight; the profile line forming an even, but not strong, curve. The clypeus does not exceed in height the diameter of the fore central eyes. Colour pale, dull yellow-brown, some dark veinings indicating the normal indentations.

Eyes rather large and closely grouped, in the ordinary two curved transverse lines. They are not very different in size; the hind central pair are of an oblique-oval form, their most proximate points separated from each other by less than their narrowest diameter, and from the hind laterals by only a very slightly greater interval. Fore central pair large, and separated

from each other by a very small interval; being also about equally distant from the fore-laterals.

Legs strong, but not very long; relative length 4.1.2.3; rather paler in colour than the cephalo-thorax, and furnished with a few spines, chiefly on the tibiæ and metatarsi of the third and fourth pairs of legs.

Falces moderately long, tolerably strong, and rather darker in hue than the legs.

Maxillæ strong, of ordinary form; curved and inclined towards the labium, but with a very slight impression across the middle; their colour darker than that of the cephalo-thorax. Labium oblong-oval, longer than broad, its apex rather rounded, and somewhat darker than the maxillæ.

Abdomen elongate-oval, rather truncate before; and of a dull sooty brown colour, with a somewhat deeper longitudinal central stripe on the fore half of the upper side; on each side of this are faintly visible the usual three elongate pale spots in a curved longitudinal line, followed by a very faint indication of the ordinary transverse angular lines. The under side is paler than the upper, and the whole is clothed with very short pale hairs. The genital aperture is tolerably large, of characteristic and distinctive form, with a red-brown corneous margin; and immediately behind it are two red-brown, shining, circular, convex spots close to each other in a transverse line. The whole is surrounded by coarse, dark converging hairs.

An adult and two immature females of this species were found at the roots of coarse grass and herbage on the Weymouth side of the Chesil Beach, near the Portland station, on the 6th of June, 1879. It is allied to *Drassus criminalis*, Cambr., and *Drassus infuscatus*, Westr., but is very much smaller, and differs totally in the form of the genital aperture, as well as in the relative position of the eyes, though resembling those spiders a good deal in general form and colouring.



FAMILY DICTYNIDES.

GENUS DICTYNA, *Sund.*

DICTYNA PUSILLA.

DICTYNA PUSILLA, *Westr.*, *Aran. Suec.*, p. 385.

This species is closely allied both to *Dictyna arundinacea*, Linn. (p. 49), and *D. uncinata*, *Westr.* (p. 50). It may be distinguished from the former by its smaller size, and the greater length of the spur on the radial joint of the male palpus. From *D. uncinata* it may be known by the radial joint being shorter than the cubital, whereas in that species it is much longer; the spur, also, on the radial joint is more robust in *D. pusilla* than in *D. uncinata*. In other respects the present spider is very like both the other species mentioned.

I met with examples of this spider in a hedge near Honeycombe Wood, Sherborne, in May, 1879. It had previously been recorded from Wick Copse, near Oxford, and the neighbourhood of Guildford, in Surrey.





FAMILY THERIDIIDES.

GENUS THERIDIOSOMA, *Cambr.*

Cephalo-thorax short; thorax round-oval, and, looked at in profile, gradually rising in a curve to the ocular area; caput strongly constricted on the lateral margins, and deeply indented on each side near the thoracic junction.

Eyes of tolerable size, closely grouped, subequal, and in two rows; the posterior row much the most strongly curved. Those of the fore-central pair on a tubercular prominence. The four central eyes form a trapezoid whose anterior side is shortest.

Legs short, moderately strong; relative length 1.2.4.3., or 1.4.2.3., furnished with coarse hairs and a few strong bristles only.

Maxillæ short, strong, straight, convex in front, broad at their extremities, where the outer side is well rounded, and the inner side rather less so.

Labium short and somewhat semicircular.

Abdomen large, and globular.

This is a genus of very great interest, and appears to be a connecting link between *Theridion* and *Epëira*. Dr. L. Koch includes a very closely allied species in the genus *Theridion* (*T. gemmosum*), but the form of the maxillæ and the stronger legs seem to exclude it entirely from that group, and to necessitate a new genus for its reception. Dr. Koch describes the snare as consisting simply of a few lines spun from plant to plant. This habit, together with some structural considerations, exclude it from the *Epëirides*, which, however, it resembles very closely in the form of the maxillæ. The egg cocoon is pear-shaped; it is

suspended by a slender foot stalk, and is something like that of *Ero thoracica* (p. 233).

THERIDIOSOMA ARGENTEOLUM.

THERIDIOSOMA ARGENTEOLUM, *Cambr.*, Ann. and Mag. N. H., 1879, ser. 5, vol. 4, p. 194, pl. xii, fig. 8.

Adult female, length very slightly over 1 line.

The colour of the cephalo-thorax is yellow, the caput suffused with sooty black, especially on the sides near the occiput; a few hairs are directed forwards from the ocular area, with some others disposed in a central, longitudinal line running backwards.

The eyes occupy the whole width of the caput, at its rather produced extremity. Those of the hind-central pair are of a blueish-grey hue, and are nearer together than each is to the hind-lateral eye on its side; the interval being half an eye's diameter. Those of each lateral pair are placed slightly obliquely on tubercles, the hinder one being the smallest and of a pearly white hue; the fore laterals pale greyish; the fore centrals are seated on a rather strong tubercular prominence, and are dark coloured and not easily seen. The hinder row is much more strongly curved than the anterior one; the eyes of the latter are near together, but not contiguous; the interval between the fore centrals being very small, while that between each and the fore-lateral on its side is little greater.

The legs are short, moderately strong, 1.2.4.3, but the difference between 2 and 4 is very slight. Their colour is yellow, the tibiæ tinged with brownish-orange and much stronger than the metatarsi. The extreme point of the metatarsi and the fore half of the tarsi are black. Their armature consists of hairs, and a very few prominent and rather strong bristles only. None of the latter are, however, sufficiently strong to be called a spine; the tarsal claws are rather weak.

The palpi are slender, short, of a yellowish colour, tipped with blackish, and furnished with coarse bristles.

The falcæ are moderate in length and strength, vertical, and similar to the legs in colour; the denticulations being very minute.

The maxillæ are of a dull yellowish hue, and the labium is rather darker coloured.

The sternum is of a somewhat subtriangular form, yellow along the middle, with a broad, dark yellowish brown border.

The abdomen is very large, globular, and projects greatly over the base of the cephalo-thorax. It is very thinly clothed with hairs, and is of a shining silvery white colour, with a golden tinge on the middle of the upper side, and clouded in parts with a pale brownish claret hue, forming a definite though not a very strongly marked pattern; and the whole surface is covered with an irregular network of fine dusky lines. On the fore part of the upper side is a ring, formed by a band of a pale claret colour; the enclosed space bears a darkish cruciform marking; this is followed by a somewhat dagger-shaped marking of a similar hue, which runs into a large quadrato dull claret-coloured area; this area is rather the palest along the middle, and at the fore extremity, but reaches quite to the spinners, on each side, a little above which there is a largish silvery blotch, with another, smaller one, still nearer to the spinners. The sides are marked with a strong, oblique, claret-coloured stripe or band. The under side is reddish-brown. The spinners are short and compact, the four outer ones equal in length. The genital aperture is rather large, of a transverse somewhat oval form, and placed behind a strong, shining, black prominence.

A single example of this very pretty and distinct little spider was found among low herbage on the edge of a watery swamp near Bloxworth on the 30th of June, 1879. It is closely allied to *Theridion gemmosum*, L. Koch, but on comparison with types of that spider received from Dr. L. Koch I think it is of a distinct species. The colouring and pattern are different; the tibiæ of the first pair of legs appear to be rather longer and

stouter, and the interval between the eyes of the hind central pair is slightly greater.

Since the example above described was found I have met with (on the 11th of September, 1879) eight egg-cocoons of this little spider. These were all attached, by a very slender silken stalk, to the under sides of the leaves of rhododendrons growing on the banks of the same swamp, not far from the spot where the spider was found, and at a height of about five to seven feet from the ground. They are smooth, of a pear shape, and of a dull yellowish-brown colour; a small portion, at the smaller end immediately connected with the stalk, being of a dull whitish hue. The eight cocoons found varied a little in size, measuring from $1\frac{1}{2}$ to $1\frac{3}{4}$ line in length to the white portion, and from rather under 1 line to $1\frac{1}{4}$ in breadth at the widest part. The length of the stalk varies considerably; no two of the eight cocoons met with were alike, but measured from 7 to 19 lines; and, curiously enough, the smallest cocoon had the longest stalk. Hanging mid-air from beneath the leaves, these pretty little cocoons had a rather striking and conspicuous appearance. Although I did not find the spider with any of the cocoons I feel no doubt but that they are the product of *Theridiosoma argenteolum*. They are very like the one figured of *T. gemmosum* by Dr. L. Koch (l. c.), but are paler coloured and less globular, being of a rather more elongate form.

GENUS NERIENE, *Blackw.*

NERIENE CORNIGERA.

NERIENE CORNIGERA, *Blackw.*, l. c., p. 273, pl. xix., fig. 187.

Length of the male 1 line.

The cephalo-thorax is brownish-yellow, slightly raised at the ocular region, and the falces divergent. The legs are slender (4.1.2.3.) and similar to the cephalo-thorax in colour, the tibiae of the first and second pairs being deep blackish-brown. The cubital and radial joints of the palpus are short, the radial joint

is strongest, prominent at its fore extremity on the upper side, and furnished with several long black bristles at its base. The digital joint is oval, with a long, conical, horn-like process at its base. The end of this process extends backwards to the extremity of the cubital joint, and terminates with several strong black bristles bent backwards. Palpal organs prominent and complex. Abdomen dark dull brown.

Allied to *N. conigera*, Cambr. (p. 132), but easily distinguished by the great length of the horn-like process on the digital joint.

A single example of this exceedingly distinct and remarkable spider, was found by Mr. Blackwall among moss in a wood on Gallt y Rhyg, near Llanrwst, in the autumn of 1854; another, also an adult male, among coarse grass and rushes in a swamp near Bloxworth by my son, Robert Jocelyn, on the 28th April, 1879; and two others among moss in the same neighbourhood in October, 1879, and April, 1880.

NERIENE REPROBA.

NERIENE REPROBA, *Cambr.*, Ann. and Mag. Nat. Hist., 1879, ser. 5, vol. 4, p. 126, pl. xii., fig. 2.

Length of the adult male very nearly $1\frac{1}{2}$ lines.

The cephalo-thorax is of a dusky yellow-brown colour marked with converging lateral indistinct markings of a deeper hue; its convexity is moderate; the lateral marginal compression at the caput scarcely visible, and the profile line forms a gradual and pretty even curve from the hinder extremity to the eyes. The height of the clypeus slightly exceeds half that of the facial space.

The eyes are in the usual position, placed on black tubercular spots, and form an area whose transverse measurement is about double that of the longitudinal diameter. They are of moderate size and do not differ greatly from each other in that respect; and the curves (opposite to each other) of the two rows (of which the anterior is the shortest) are as nearly possible equal. The eyes of the hind-central pair are separated by an interval of

rather more than a diameter, and their distance from the hind-laterals is considerably greater; those of the fore-central pair are rather the smallest of the eight, contiguous to each other, and separated by a diameter's interval from the fore-laterals; those of each lateral pair are contiguous to each other, and seated obliquely on a strong tubercle.

The legs are moderate in length and strength; 4.1.2.3. tapering regularly to their extremities, well furnished with coarse, rather prominent hairs, and a few slender erect bristles and hairs; they are of a pale dull yellow-brown colour; rather deepening in hue towards their extremities.

The palpi are rather short, similar in colour to the legs, excepting the fore part of the radial joint, which is blackish red-brown, and the digital joint which is of a dark yellow-brown hue. The radial is rather shorter, but stronger, than the cubital joint; its fore extremity, on the upper side, is produced, and strongly emarginate, or indented in a circular form leaving two cusps, of which that on the inner side is slightly curved, pointed, and of a corneous appearance; this joint is furnished with coarse hairs and black bristles, of which those on the outer side are most numerous and strongest. The digital joint is furnished thickly with coarse bristles and of moderate size; its form is oval, with a large roundish lobe at the base on the outer side tinged with red-brown; and at the middle of the hinder extremity is a short red-brown, somewhat toothlike, pointed prominence, whose point is directed outwards. The palpal organs are highly developed and complex, a strong, somewhat pointed process, with its inner edge minutely serrated, projects prominently downwards from near their centre, and at their fore extremity on the outer side is another short strong one of a black hue, whose extremity appears to be subdivided into several short divergent projections.

The falces are similar in colour to the cephalo-thorax, moderately long, powerful, vertical, slightly divergent at their extremities, and have each a strong, sharp-pointed tooth-like process in front, towards the fore extremity on the inner side.

The maxillæ are strong, especially at their base on the outer

side, where the palpi are inserted, obliquely truncated at their extremity on the outer side, and strongly inclined towards the labium; this latter is short, and of a somewhat semicircular form.

The abdomen is oval, rounded before, pointed behind, and moderately convex above; it is of a dull sooty yellowish-brown hue, clothed thinly with coarse blackish hairs.

This spider is allied to *Nerienne livida*, Blackw., but may be easily distinguished by the tooth-like process on the falces, and the absence of the red-brown impressed spots on the upper side of the abdomen, as well as by the totally different structure of the palpi and palpal organs. It is also allied to *Nerienne (Drepanodus) albipunctata*, Cambr., but the bifid termination of the tooth-like process on the falces of the latter, the armature of the tibiae of the first and second pairs of legs, the wide separation of the fore central eyes will, with some other important differences, distinguish that spider at once from the present one.

A single example of the adult male was found under a stone at Ringstead (on the coast between Weymouth and Whitenose) in April, 1879, by my nephew, Frederick O. P. Cambridge.

NERIENE UNCATA.

NERIENE UNCATA, *Cambr.*, Trans. Linn. Soc. xxviii., p. 546, pl. xlv., fig. 17.

Adult male length rather more than $1\frac{1}{2}$ lines; the female being slightly larger.

The cephalo-thorax is of an oblong form, broadest behind; the occiput being rather abruptly raised or gibbous, and furnished with numerous longish erect bristly hairs. Its colour is a deep rich, blackish, red-brown. The ocular area is broad, occupying the whole width of the caput and forming a flattish transverse space in front of the occipital gibbosity. The eyes of each lateral pair are seated on a strong tubercle. The interval between those of the hind central pair is equal to rather more than an eye's diameter, and much less than that which separates

each from the hind-lateral eye on its side. The height of the clypeus, which is vertical, and has no impression, is equal to half that of the facial space.

The legs are tolerably long, and moderately strong. They are of a brightish red-brown colour, furnished with hairs and bristles, and several erect, slender, spine-like bristles on the femora and tibiæ. The relative length of those of the male appear to be 4.1.2.3., and those of the female 1.4.2.3., the difference between those of the first and fourth pairs not being very great in either sex.

The palpi are of moderate length, and, excepting the digital joints which are deep brown, similar to the legs in colour. The cubital joint is short and rather bent; the radial joint is also short, but much stronger than the cubital, and has its fore-extremity produced into a strong, prominent, tapering-pointed, curved apophysis, directed rather inwards, and with its extreme point more or less strongly bent or hooked; on the inside this apophysis is hollowed or grooved. The digital joint is of moderate size and ordinary form. The palpal organs are well developed, but not very complex; at their base, on the outer side, immediately beneath the radial joint, is a small process, with a tuft of strong black bristles issuing from it. These bristles are usually so closely grouped together as to appear like a single black curved spine; a strongish black spine issues from the base of the palpal organs, runs round their outer side, and curves round in a sharp filiform point beneath the fore-extremity of the digital joint.

The falces are rather long, strong, vertical, prominent near their base in front, armed with strong teeth, and (together with the maxillæ, labium, and sternum) similar to the cephalo-thorax in colour.

The abdomen is of a short-oval form, and in the male projects but slightly over the base of the cephalo-thorax; it is glossy, clothed with dark hairs, and of a dull, dark, blackish-brown hue tinged with yellow.

In the female the abdomen projects considerably above the

thorax ; the occipital gibbosity is also less strong. The eyes of the hind central pair are nearer to the laterals than in the male. The genital aperture is rather small, of a somewhat triangular form, with a kind of flap of a similar form overlapping its fore part, the apex of the triangle being directed backwards. I met with a female of this fine and very distinct species among dead rushes in a swamp near Bloxworth, on the 12th of April, 1880. Some years ago both sexes were sent to me from Northumberland by Mr. James Hardy; and from Scotland by Professor Traill, of the University of Aberdeen.

NERIENE VIVA.

ERIGONE VIVA, *Cambr.*, Proc. Zool. Soc. 1875, p. 330, pl. xliv., fig. 5; and Ann. and Mag. N. H. 1879, ser. 5, vol. 4, p. 210.

Length of the adult male $\frac{3}{4}$ rds of a line.

Cephalo-thorax brownish yellow; it is of ordinary form, and the lateral constrictions at the caput are slight; the profile line forms a tolerably even curve, the highest point of which is at the occiput. The height of the clypeus is equal to half that of the facial space, and projects a little forwards at its lower margin. The ocular area is furnished with a few prominent hairs, and a few similar ones are disposed in a central, longitudinal line, running backwards from the hind central eyes.

The eyes are of tolerable size, nearly equal; those of the hinder row are equidistant from each other; the intervals being equal to an eye's diameter; those of the anterior row are almost contiguous to each other; the interval between either of the centrals of the anterior row and the lateral on its side being very small, while there is none between the centrals. The interval between each fore-central eye and the hind-central opposite to it is equal to the diameter of the latter. The eyes of each lateral pair are, as usual, contiguous and obliquely placed.

The legs are moderate in length and strength, 1.4.2.3., rather

paler and clearer in colour than the cephalo-thorax, furnished with hairs, and a few slender erect bristles.

The palpi are similar in colour to the legs, rather short and slender. The cubital joint is short and bent downwards; the radial is still shorter, but has its fore extremity prominently produced into a rather long, strong, tapering apophysis, whose point, when looked at in profile, is slightly hooked; about the middle of the outer side of this apophysis is a prominent, somewhat toothlike projection, and from the inner side of the joint there projects another small, pointed, and slightly curved apophysis. The digital joint is small, with a lobe on its outer side. The palpal organs are well developed, and moderately complex; at their base on the outer side is a large, somewhat subtriangular corneous process, and at their extremity are several small, prominent, black, corneous processes of different sizes.

The falces are similar in colour to the cephalo-thorax; tolerably long and strong, and nearly vertical. Each has a strong, curved, but not very sharp toothlike process in front towards the extremity on the inner side directed downwards, and on the inner margin below it are several minute denticulations. The maxillæ, labium, and sternum are of rather a darker colour than the cephalo-thorax, but present no unusual feature. The abdomen is short-oval, tolerably convex above, thinly clothed with hairs, and of a yellow-brown colour tinged with olive.

Two adult males of this spider were found among grass and rushes in a swamp near Bloxworth, on the 16th of May, 1879, and numerous examples of both sexes among moss near the same spot in October and November of the same year. The female resembles the male very closely in colours, but is slightly larger. The form of the radial apophysis and the strong tooth on the fore side near the extremity of the falces in the male are very strong and distinctive characters. Previously its only known localities were at Chaville (near Paris) and Troyes in France.

This species is nearly allied to *Neriene do'osa*, Cambr. (p. 126.)

found in the same locality; but the latter spider differs in the form of the radial joint of the palpus, and has no tooth like that noted on the falces of *Neriene viva*.

NERIENE DILUTA.

ERIGONE DILUTA, *Cambr.*, Proc. Zool. Soc. 1875, p. 331, pl. xliv., fig. 6.

Length of the male from 1-18th to 1-16th of an inch, the female being a little larger.

This obscure little spider is nearly allied to *Linyphia Frederici*, *Cambr.* (p. 186), and to *L. oblivia*, *Cambr.* (p. 214), but it is, I think, quite distinct from both of them.

It may be distinguished from *Linyphia Frederici* by the following differences:—the ocular area is narrower from back to front; the height of the clypeus is nearly or quite equal to half that of the facial space, while in *Linyphia Frederici* it is distinctly less; the spines on the legs are not quite so long nor so strong, being in fact scarcely, if anything, more than mere bristles; and the abdomen is nearly globular instead of ovi-form. The differences noted above in respect to the width of the ocular area, the form of the abdomen, and the height of the clypeus, will also serve to distinguish this spider from *Linyphia oblivia*.

The eyes are rather closely grouped together, and the interval between each of those of the hind central pair and the fore-central eye nearest to it, is less than that which separates the hind-centrals.

The digital joints of the palpi are of moderate size, and the palpal organs are complex; a noticeable feature in these organs is furnished by a long, slender, dark-coloured, corneous process, running along, but generally just free from their outer side, and slightly angularly bent in the middle; a correspondingly situated process in *Linyphia Frederici* is stronger and of a simply and regularly curved form.

The female resembles the male in form and colours. The genital aperture is small, and has only a slightly prominent, and inconspicuous process connected with it.

Adults of both sexes were found in tolerable abundance among moss in a fir plantation near Bloxworth in October, 1879. This is its first record as a British spider. In 1875 I received it from France (where it appears to be not uncommon) from Monsieur Eugène Simon. I have placed it here in the Genus *Neriene*, though it is one of those generically obscure spiders which on a thorough revision of *Linyphia* and *Neriene*, must be placed (with some others) in a separate genus.

NERIENE DEMISSA, sp. n.

Length of the adult female scarcely, if at all, over $\frac{2}{3}$ ds of a line, or 1-18th of an inch.

The whole of the fore part of this minute spider is yellow; the legs strongly tinged with brownish red; the colour of the abdomen being olive brown, closely freckled with yellowish points; these (together with some other pale lines and markings on the upper side) are probably only (or chiefly) visible when in spirits of wine. The cephalo-thorax is distinctly margined with a black line; and the sides are marked with a dusky, sub-marginal, indistinct, suffused line, besides some dusky, converging bars. The lateral, marginal constrictions at the caput are slight; and, when looked at in the profile, the nearly level line from the caput to the thoracic indentation is broken by a slight notch, or dip, close behind the eyes, and another just behind the occiput; the point where the posterior slope begins being somewhat prominent. The eyes are small, and closely grouped together; those of the two lateral pairs and the fore-central pair form a curved line of six contiguous eyes. The interval between those of the hind-central pair is equal to a diameter, and that between each and the hind-lateral eye on its side is scarcely more than half a diameter. The ocular area is strongly suffused with black; and immediately behind the interval between each of the hind-

central eyes, and the hind-lateral eye next to it, is a shallow impression, which, being partly edged with black, is very perceptible from above. The height of the clypeus is less than half that of the facial space.

The legs are moderately long (4.1.2.3.), slender, furnished with hairs and a few erect bristles, one issuing from near the middle of each of the tibiæ of the fourth pair being longer than the rest, and of a spinous nature. The falces are moderately long, tolerably strong, straight, and a little inclined to the maxillæ, which (with the labium) present no noticeable feature.

The abdomen is of a short-oval form, with a considerable upper convexity. It is thinly clothed with coarsish hairs, and projects a little over the base of the cephalo-thorax.

The genital aperture is small and margined with brightish red-brown. From its anterior margin a long, slender, nearly cylindrical, slightly bent, diaphanous process (or epigyno), extends backwards in close proximity to the inferior surface of the abdomen. The point of this process reaches half way between the fore extremity of the abdomen and the spinners, which last are very short and of a pale dull yellowish hue.

A single example of this very characteristic little spider, which is allied to *Neriene diluta*, Camb., was found among heather on Bloxworth Heath, in October, 1878.

The long slender genital process distinguishes it readily from all others of this group yet known to me.

NERIENE NEFARIA.

NERIENE NEFARIA, *Cambr.*, Ann. and Mag. Nat. Hist. 1879, ser. 5, vol. 4., p. 200, pl. xii., fig. 4.

Adult male length 1 line.

The cephalo-thorax is of ordinary form. The marginal constriction on each side of the caput is slight, the occiput a little rounded, and with only a slight depression between it and the thoracic indentation. The oblique grooves marking the junction of the caput and thorax are strong, and, together with those on

the thorax, are marked with dusky-black converging lines; the general ground colour being dull greenish-olive yellow-brown, with a black marginal line. The height of the clypeus, which is a little gibbous or rounded in profile, is rather more than half that of the facial space.

The eyes are in two curved rows, well separated from each other, and occupying the whole width of the upper part of the caput; the curve of the posterior row being the strongest. The length of the anterior row is but very slightly shorter than that of the posterior one; the eyes of each of the lateral pairs are contiguous to each other, and seated on tubercles, being thus but very slightly oblique in their position. The eyes of the posterior row are of equal size, and separated by equal intervals of no more than a diameter's extent. Those of the fore-central pair are near together, but not quite contiguous to each other; the fore-laterals are the largest of the eight, and distant from the fore-centrals by about the diameter of the latter. The four central eyes form a narrow trapezoid, the anterior side of which is shorter than the posterior.

The legs are rather short, tolerably strong, their relative length 4.1.2.3.; they are of a clear yellow colour, furnished with coarse hairs and a fair number of short, erect, fine bristles, mostly on the tibiæ and metatarsi of the first two pairs; a single stronger bristle also springs from the anterior extremity of the genual joints. The palpi are similar in colour and armature to the legs.

The falces are vertical, moderate in length and strength, divergent at their extremities, and similar in colour to the cephalo-thorax.

The maxillæ are strong, and a little inclined to the labium, which is broad but short; these parts are similar in colour to the falces. The sternum is heart-shaped and of a deeper hue.

The abdomen is of moderate size, and of a broadish oviform shape; it is of a dull blackish colour, palest underneath, and pretty thickly clothed with coarse hairs. The process connected with the genital aperture is rather prominent, of a red brown

hue, and of characteristic form. A little way in front of the spinners, beneath the extremity of the abdomen, is a very distinct, transverse slit, or narrow opening, of considerable length; this, without a doubt, is the orifice of an extra spiracular organ, and forms a very strong specific character in the present spider, even if it be of no greater systematic significance.

A single example was found at the roots of herbage on the ledge of the cliffs bordering the Smallmouth Sands, near Weymouth, on the occasion of the meeting of the Dorset Natural History and Antiquarian Field Club on the 2nd of July, 1879.

NERIENE PYGMÆA.

NERIENE PYGMÆA, *Blackw.*, l.c., p. 261, pl. xviii., fig. 177.

ERIGONE BARBATA, *Thor.*, Diagn. Aran. Europ. Tijds. Ent. xviii., 1875, p. 89; and, Svenska Vet-Akad., 1475
Handl. Bd. 13, No. 5, p. 43; and *Cambr.*,
Ann. and Mag., N.H., ser. 5, vol. iv.,
1879, p. 210.

Length of the adult male rather less than 1 line.

The cephalo-thorax is but very slightly constricted on the sides at the caput, which is well rounded above and obtuse in front; its profile line from the eyes backwards is even, and in a gradually sloping, but very slight, curve; the occiput is very slightly gibbous, and, as well as the ocular area and clypeus, is clothed, but not at all densely, with rather coarse, pale hairs, directed forwards. The height of the clypeus is greater than half that of the facial space. The eyes are small and in the ordinary position; those of the hind-central pair are much nearer together than each is to the hind-lateral eye on its side, being divided by an interval of scarcely $1\frac{1}{2}$ diameters. The colour of the cephalo-thorax is a deep, shining, black-brown, that of the legs, which are slender and not very long, 4.1.2.3., is a bright reddish, orange-yellow, and the abdomen is of a dull black hue.

The surface of the thorax and sides of the caput, when seen through a strongish lens, appears to be (like that of many other

species) thickly but exceedingly finely sculptured with minute striæ.

The palpi are short, the cubital and radial joints very short; the latter is the strongest, but has no projection or apophysis, being only furnished with hairs and several longish bristles in front, rather on the outer side. The digital joint is rather small, with a large lobe on the outer side, towards the hinder extremity. The palpal organs are complex, but do not present any very noteworthy feature.

On the 9th of July, 1863, I found an adult male near Sherborne, running on the Yeovil Road. This species, which was inadvertently omitted in the former part of the work, is also found among grass in old pastures as well as on railings and footpaths, in Lancashire, North Wales, and several parts of Scotland, as far north as Rosshire. There is now I think no doubt of its identity with *Erigone barbata*, Thor., l.c., though at the time of the publication of my paper (Ann. and Mag. N. H., 1879), I believed it to be distinct.

NERIENE IMPROBA.

NERIENE IMPROBA, *Cambr.*, Ann. and Mag. Nat. Hist. 1879, ser. 5, vol. 4, p. 202, pl. xii., fig. 6.

Length of male 1-14th of an inch.

Cephalo-thorax dark black-brown, tinged with an olive-greenish hue. Ocular area somewhat produced forwards, but with no eminence or elevation on the caput; profile level, the dip between the caput and thorax very slight.

The eyes are at the extremity of the caput. The four centrals describe a square, whose posterior side is longer than the rest. The position of the fore-central and lateral pairs is rather difficult to make out, owing to their indistinctness, but the interval between the eyes of the former considerably exceeds a diameter.

Legs moderately long, slender, yellow.

Palpi short; digital joint and palpal organs very large, the rest very slender. The cubital joint is very short; the radial

stronger and considerably produced in front, in a somewhat curved form, over the base of the digital joint, pointing outwards; its extremity being deeply cleft, or bifid; the posterior portion of the bifid part is prominent, and tipped with a small reddish-brown point; the anterior portion is obtuse, and adheres more closely to the digital joint. Palpal organs complex, but tolerably compact; and at their extremity is a very small, fine, brown spine, curved in a circular form, but almost concealed in a membranous substance.

Abdomen black and glossy.

A single example was received from Mr. T. Workman, of Belfast, by whom it was found near that city, and kindly sent to me among some other spiders taken in the same locality. Subsequently (May 15, 1879) an adult and immature males were found at Bloxworth under some bricks in the Rectory yard. In the form and structure of the palpi and palpal organs this spider bears much general resemblance to *Walckenaëra erythropus*, Westr., but the entire absence of any elevation on the caput distinguishes it at a glance from that species. The portion of the structure also in the palpi of that spider corresponding to the posterior part of the bifid extremity of the digital joint, emerges very distinctly from beneath the joint, while in the present species it appears to form part of the upper side of it.

GENUS WALCKENAERA, *Blackw.*

WALCKENAERA INGRATA, sp. n.

Adult male; length 1-16th to 1-18th of an inch, that of the female being a little more.

The caput of the male of this minute spider has no distinct elevation. The length of the hinder (or thoracic) slope is as nearly as possible equal to the length of the caput, and there is a very slight depression (visible in profile) at the occiput. From immediately behind each hind-lateral eye a distinct, long, tapering, slightly curved indentation runs backwards, its fine point directed to the occipital depression. The height of the clypeus is

distinctly less than half that of the facial space, and a few fine but prominent bristles directed forwards form a central longitudinal line on the top of the caput. The colour of the cephalo-thorax is a dull yellowish-brown.

The eyes of the posterior row form a strong curve, while the anterior row is nearly straight, so that (when looked at from in front) each of the hind-central eyes taken with the fore-laterals form an isosceles triangle; the eyes of the hind-central pair are separated by rather less, or at least no more, than an eye's diameter, and are distinctly nearer to each other than each is to the hind-lateral eye on its side; the eyes of the fore-central pair are the smallest, very indistinct, contiguous to each other, and separated from the fore-laterals by less than a diameter's interval; the four central eyes form a trapezoid whose posterior width is distinctly less than its length, or perhaps (including the width of the eyes) nearly or about equal to it.

The legs are rather short, slender, of a slightly reddish yellow-brown hue furnished with hairs, among which are a very few slender erect bristly ones. The articulations of the different joints being a little paler than the rest give the legs a somewhat annulated appearance.

The palpi are short, and similar in colour to the legs. The radial is shorter, but rather stronger than the cubital joint, and has at the middle of its fore extremity on the upper side a minute, pointed, prominent process. The digital joint is very small, and the palpal organs present no very noticeable processes.

The falces are rather weak, and of moderate length, straight, perpendicular, and armed with a few very minute teeth near their extremity on the inner sides; their colour is similar to that of the cephalo-thorax.

The maxillæ and labium are of normal form, and similar in colour to the falces; the sternum being slightly suffused with blackish.

The abdomen is oviform, considerably convex above, but scarcely projecting over the base of the cephalo-thorax; its colour is a dull olive-brown, its surface glossy and also thinly

clothed with fine hairs. Immediately in front of the spinners is a transverse slit-like fold, which is probably the external orifice of a spiracular organ.

The female is rather larger, but resembles the male in colours and general characteristics; the ocular area, however, appears to be a little flatter, and the interval between the eyes of the hind-central pair equal to, if not slightly greater, than that between each and the hind-lateral eye next to it.

Adults of both sexes of this little spider were found among moss in a fir plantation at Bloxworth, in October, 1879. It is closely allied to *Walckenaera præcox*, Cambr. (p. 143), but among other slight differences, the cephalo-thorax of the latter is distinctly broader in proportion to its length; the hinder slope is less steep, and its colour is of a clearer, brighter, yellow-brown; the height of the clypeus is also greater, being more nearly equal to half that of the facial space, and the abdomen projects distinctly, though not greatly, over the base of the cephalo-thorax. It is also nearly allied to *Walckenaera subitanea*, Cambr. (p. 144), but the marks of distinction in that spider from *W. præcox* (given p. 144) will serve to distinguish it from the present species. It may also be remarked that in *W. subitanea* the abdomen projects very considerably and closely over the thorax, almost covering its entire slope. The falcies also are stronger, and the indentations running back from the hind-lateral eyes are quite straight.

WALCKENAERA NUDIPALPIS.

ERIGONE NUDIPALPIS, *Westr.*, Aran. Succ., p. 201.

WALCKENAERA NUDIPALPIS, *Cambr.*, Trans. Linn. Soc. xxvii., p. 461.

Length of the male rather more than $1\frac{1}{2}$ lines, that of the female 2 lines.

The colour of the cephalo-thorax of this fine species is a deep rich black-brown. The caput is a little elevated, but has no distinct eminence. The height of the clypeus (which projects

forwards gradually to its lower margin) considerably exceeds half that of the facial space, and, when looked at in profile, there is a distinct, though not very great, dip or impression just behind the occiput.

The eyes are of tolerable size, and rather closely grouped together; the interval between those of the hind-central pair is greater than that between each of them, and the hind-lateral eye next to it.

The legs are rather long, and tolerably strong (4.1.2.3), of a bright reddish orange-yellow colour, furnished with short fine hairs, and a very few erect ones on their anterior sides.

The palpi are long, similar to the legs in colour, excepting the radial and digital joints, which are of a black-brown hue. The cubital joint is long, somewhat clavate, and clothed with exceedingly short fine hairs; the radial is short and small, and has at its fore extremity on the upper side a strong, somewhat bifid, apophysis; on the outer side is another more slender one projecting at right angles, straight, terminating with a small, sharp curved claw, and with a small somewhat tubercular prominence near its extremity in front. The radial joint also projects strongly and in a curved form at its extremity behind, and has thus a remarkable appearance, being very like a bird's foot with strong spreading toes or claws. The digital joint is large, and the palpal organs very prominent and complex, with a strong, but not very long, circularly curved, black spine closely adhering to their extremity on the outer side.

The falces are neither very long nor strong, their colour being like that of the cephalo-thorax. The maxillæ and labium are dark brown and the sternum blackish.

The abdomen is of a short-oval form, of a dull blackish-brown colour, pretty thickly clothed with short hairs, and projects fairly over the base of the cephalo-thorax.

The female resembles the male in form and colours. The whole palpi in this sex are of a blackish hue.

Adult males and females of this spider were found among moss in a fir plantation near Bloxworth in October, 1879, and

adult females, but no males, in April, 1880. I had previously received it from Paisley (near Glasgow) and Berwickshire, and from Wicken Fen near Cambridge; but it appears to be a rare spider, as only a single example was found in each of the three latter localities.

WALCKENAERA OBTUSA.

WALCKENAERA OBTUSA, *Blackw.*, l.c., p. 224, pl. xx., fig. 208.

Length of the adult male 1·7th of an inch, that of the female being 1·6th.

The cephalo-thorax of this fine species is of a deep brownish-black colour; the surface, excepting the upper part of the caput, being covered with small punctures and striæ. The caput is rather raised, and the ocular region a little prominent, but there is no special elevation or protuberance.

The eyes are of moderate and nearly equal size, and rather closely grouped together; those of the posterior row are separated by about equal intervals rather exceeding a diameter's extent. The height of the clypeus equals (if it does not exceed) two-thirds of that of the facial space, and projects forwards gradually to its lower margin.

The legs are moderately long and strong, 1.4.2.3, of a bright orange-red colour, and furnished with fine hairs.

The palpi are long, the humeral and cubital joints similar to the legs in colour; the latter joint is long, clavate and furnished with short black hairs. The radial joint is short, blackish-brown, with a long, strongish, peculiarly shaped apophysis at its fore extremity rather on the inner side, and another more prominent, but shorter, more tapering and obtusely pointed, on the outer side, the point being furnished with several contiguous, short, strong, spine-like bristles. Between these two apophyses is a short, sharp-pointed thorn-like prominence. Beneath the radial joint there is, also, a third apophysis, but much smaller and less conspicuous than the others. The digital joint is large, and of a deep brownish-black hue. The palpal organs are complex, and sur-

rounded, towards their extremity on the outer side with a long, strong, black spine, forming a very large, conspicuous double coil, within which is a quantity of whitish membrane.

The abdomen is oval, and projects well over the base of the cephalo-thorax; its colour is glossy black furnished thinly with hairs.

This spider is nearly allied to *Walckenaera nudipalpis*, Westr., which it resembles in general appearance and colours, but it may be at once distinguished by a different formation of the palpi, especially the form of the outer apophysis of the radial joint, which in *W. nudipalpis* is slenderer, more prominent, and ends with a small sharp-curved claw, and has, near its extremity in front, a small somewhat tubercular prominence. The radial joint itself is also shorter and stronger, and the surface of the cephalo-thorax is more coarsely striated or sculptured.

I met with an adult male among moss in Berewood on the 6th of April, 1880; the only previous example known having been found by Mr. Blackwall many years ago in North Wales; and on the 1st of May, 1880, I found an adult female among moss in a wood at Bloxworth. This sex resembles the male in colours and general characters; it is also very like the female of *W. nudipalpis*, but is larger and differs in the form of the genital aperture.

WALCKENAERA PROMINULA.

ERIGONE PROMINULA, *Cambr.*, Proc. Zool. Soc., 1872, p. 750, pl. lxx., fig. 4.

Length of the male 1 line.

The cephalo-thorax is of a deep brown-black hue; the caput elevated and prominent, but with no distinct eminence; its summit is truncated and slopes forwards, and the slope of the occipital region is rather abrupt. The eyes are grouped in four pairs round the summit of the caput, but there is no indentation behind those of the lateral pairs. The legs are moderate in length and strength, 4.1.2.3., and their colour is yellow,

tinged with orange. The palpi are short, and very similar in colour to the legs, the radial and digital joints being brownish. The radial and cubital joints are very short; the former is the strongest, and produced at its fore extremity into a pointed apophysis, with another shorter, sharper, and prominent one on the outer side. The palpal organs are moderately complex, and have a fine filiform spine curved in a circular form at their extremity rather on the outer side. The abdomen is black.

In the form of the caput there is some affinity to *Walckenaera humilis*, Blackw. (p. 150), but this part is smaller though more elevated than in that species. A single example of the male was found at Newhaven, Sussex, on furze bushes when in bloom in June, 1871, but originally I received the species from Bavaria. Very lately—May 21, 1880—I met with several examples of the adult male among heather on Bloxworth Heath.

WALCKENAERA JUCUNDISSIMA, sp. n.

Adult male, length 1 line; that of the female being rather greater.

The cephalo-thorax of the male of this very distinct species is glossy, and of a deep blackish, olive-brown colour; the caput is rather elevated, and has a distinct, roundish, knob-like eminence on the summit of the fore part. When looked at in profile the anterior face of the eminence is rather flatter or less prominent than the posterior, or occipital portion. The general form of the caput is not unlike that of *Walckenaera nudipalpis*, with the addition of the knob or eminence on its summit.

The eyes are not very unequal in size, those of the hind-lateral pair are placed near together, but not quite contiguous to each other, towards the fore part of the summit of the cephalic knob; while those of the other three pairs form a continuous, curved, or semicircular row, the eyes of which are contiguous to each other, immediately below the knob.

The legs are not very long (4.1.2.3), but moderately strong,

of a bright orange-yellow colour, and clothed with fine hairs, of which a few stand erect along the upper sides.

The palpi are moderate in length, the cubital joint is rather long, strong, and somewhat clavate. The radial joint is much shorter but strong, and has its inner side produced into a longish curved tapering apophysis, whose termination is pointed and appears like a corneous addition to the apophysis; the outer, as well as the posterior side, of the radial joint are also produced in an obtuse form. The digital joint is large, and, with the radial, of a dark brown colour, the rest of the palpus being similar in colour to the legs. The palpal organs are prominent and complex, with a strong black spine, curved in a circular form at their extremity on the outer side.

The falces are neither long nor strong, and are similar in colour to the cephalo-thorax, as also are the maxillæ, labium, and sternum, neither of which present any unusual feature.

The abdomen is of moderate size, and of a somewhat cylindric-oval form, of a dull blackish-brown colour, and pretty thickly clothed with fine hairs.

The female resembles the male in colours and general appearance, but wants the knob on the caput. Looked at in profile there is a considerable dip or depression behind the occiput, gradually running out to the somewhat raised thorax. A similar dip is also observable in the male. Each of the eyes of the hind central pair is contiguous to the hind lateral eye on its side; the rest being (as in the male) also contiguous to each other. They altogether form nearly a circle, whose posterior side or circumference is flattened, and has a gap in the middle equal to (apparently) rather less than the diameter of one of the hind-central eyes. The height of the clypeus is less than half that of the facial space. This sex is so very similar to the female of *Walckenaera cucullata*, C. Koch, that were it not for a different relative position of the hind-central eyes, and a slight difference in the form of the genital aperture, it would be very difficult to distinguish them. In this latter species, however, each hind-central eye, instead of being nearly or quite contiguous to the hind-lateral eye next

to it, is removed from it by a distinct, though not very large, interval. The ocular area of the female of *W. cucullata* is also larger than that of *W. jucundissima*, and the abdomen of the latter has a rather more hirsute appearance than that of the former.

Adults of both sexes of this fine addition to our British list of spiders were found among moss in a fir plantation near Bloxworth in the autumn of 1879. It is allied to *Walckenaera nodosa*, Cambr., a spider found in Northumberland, but which may easily be distinguished by the rather different form and more depressed position of the cephalic knob. Both the anterior and posterior parts of this knob (when looked at in profile) are equally rounded in *W. nodosa*. The eyes, also, of the hind-central pair, in that species, are placed further back, or more nearly about the middle of the summit of the knob.

WALCKENAERA CUCULLATA.

MICRYPHANTES CUCULLATUS, *C. Koch*, Die Arachn., Bd. iv., p. 45, pl. 89, figs. 200 and 201.

WALCKENAERA CUCULLATA, *Cambr.*, Trans. Linn. Soc. xxvii., p. 461.

Length of the male 1-10th of an inch.

Cephalo-thorax bright-blackish red-brown. The caput has a strong eminence on the fore part, rounded behind and divided by a deep transverse cleft into two very distinct segments; the anterior segment is much the smallest, of a sub-conical form, surmounted with hairs, and has in front of it the fore-central pair of eyes. The posterior segment, deeply indented on the sides of its base, bears the hind-central pair of eyes, one on each side of the fore part of its summit.

The legs are of moderate length, and, with the palpi, orange-yellow tinged with red-brown. Cubital joint clavate, radial red-brown, much shorter than the cubital, but of an expanded form, with three apophyses at its extremity; the longest is in front, somewhat pointed, slightly curved, and directed inwards;

the next is shorter, more obtuse, but more bent, and directed inwards, and the third and least conspicuous is behind; digital joint rather large, red-brown; palpal organs complex, with a moderate sized, black, fine pointed spine, circularly curved, and closely adhering to the outer side of their fore-extremity. Abdomen black, and of a rather narrow-oval form.

The female resembles the male in colours and general appearance, but the caput of course wants the cleft eminence; that part is, however, rather elevated, and between it and the thorax is a deep impression, very observable when seen in profile. The eyes are closely grouped together; those of the anterior row, together with the lateral pairs, forming an almost uninterrupted curved line. The interval between each hind-central eye and the hind-lateral next to it is less than that which separates the two hind-central eyes from each other.

A single example of the male was found some years ago in Caen Wood, near London, and sent to me by the late Mr. Richard Beck. Another was met with among moss in Bero Wood, in April, 1879, by my nephew, Frederick O. P. Cambridge, and shortly afterwards I found several females among moss in a fir plantation, near Bloxworth. More recently still (in the autumn of 1879 and spring of 1880) I have met with numerous adults of both sexes among moss in the same plantation. It is an exceedingly remarkable spider, and the male can hardly be mistaken for any other known species; but the female is very similar to that of the last spider described, *Walckenaera jucundissima*. It may, however, be distinguished without much difficulty by the different relative position of the eyes.

GENUS LINYPHIA, *Latr.*

LINYPHIA RELATIVA.

LINYPHIA RELATIVA, *Cambr.*, Ann. and Mag., Nat. Hist. 1879, ser. 5, vol. 4, p. 205.

Length of an adult male slightly over one line.

Cephalo-thorax broadish-oval, slightly constricted on the

lateral margins at the caput, of a yellowish colour, slightly tinged with brown and with some lateral converging lines of a deeper hue. The hinder slope is rather abrupt, deeply and broadly indented, and the profile line of the upper part of the thorax and caput is level, with a very slight impression behind the occiput. The ocular area is a little prominent, and, as well as the upper part of the caput, which is rather rounded, is thinly furnished with bristly hairs directed forwards. The height of the clypeus exceeds half that of the facial space.

The eyes are on black spots; those of the posterior row are removed from each other by rather less than an eye's diameter; those of each lateral pair are placed obliquely. Those of the fore-central pair are smallest of the eight, and contiguous to each other. The fore-central eyes form a square, whose anterior side, however, is much shorter than the rest.

The legs are long, slender, 1.2.4.3., similar in colour to the cephalo-thorax, furnished with hairs and armed with long, rather slender, but distinct, black spines, three on each of the tibiæ of the second, third, and fourth pairs, one on the genua, and one on the inner side of the fore extremity of the femora of the first pair only, the tibiæ of this pair having four, and there is a single spine also on each of the metatarsi.

The palpi are rather short, and similar to the legs in colour. The radial and cubital joints are of equal length; the former is much the stronger, and is a little produced at its fore extremity on the upper side; it is furnished with black bristles and hairs, four of the strongest of the former are curved and tapering, and form nearly a straight line from the base to the extremity of the joint, the line being also continued backwards by another similar bristle at the middle of the fore extremity of the cubital joint. These bristles are all of about the same length and strength.

The digital joints are of good size, and have their convex sides directed inwards towards each other. Each has a large lobe on the outer side, and two small sub-conical prominences at its posterior extremity. The palpal organs are prominent and complex, with a strong subangularly curved process at their base on

the outer side. The posterior extremity of this process is the longest and most prominent, and there are some bristly hairs issuing from the other (or anterior) extremity.

The falces are moderately strong, rather long, divergent, a little bent outwards near their fore extremity, and directed backwards, towards the sternum. Their colour is a little browner than that of the cephalo-thorax.

The colour of the maxillæ is dull yellowish, and the labium and sternum are strongly suffused with brown.

The abdomen is short-oviform, considerably convex above, and projects a little over the base of the cephalo-thorax. It is of a dull brown hue, broken up into blotches, or reticulated, by pale irregular lines, on the under part and sides, the under side being dark brown.

The female resembles the male in colour and general characters. The genital process is strong, prominent, rather directed backwards, and of a somewhat tripartite form.

Examples of both sexes of this spider were found among moss in Bere Wood, adjoining the Bloxworth woods, on the 2nd of May, 1879. It is allied to *Linyphia alacris*, Blackw., but may be distinguished easily by the different pattern of the cephalo-thorax and abdomen, and by the absence of the very long, strong, single bristle which projects from the fore side of each of the cubital and radial joints of the palpus in that species; the bristles of those joints of the present spider being (as above described) more numerous, and of as nearly as possible equal length and strength.

LINYPHIA TURBATRIX.

LINYPHIA TURBATRIX, *Cambr.*, Ann. and Mag., Nat. Hist., 1879, ser. 5, vol. 4, p. 206.

Adult male length 1 line or a little over.

The whole of this spider is of a yellow-brown colour, the cephalo-thorax being the palest and clearest, and the abdomen the darkest, with a sooty hue. The caput and thorax are about

level as far as the thoracic junction, whence the posterior slope is distinct but not very abrupt; between the occiput, which is rather rounded, and the thoracic junction is a very slight, shallow depression. The clypeus is almost vertical, and its height is less than half that of the facial space. On the fore part of the caput and along the central line, backwards, are a few strong bristly hairs.

The eyes are of tolerable size, seated on black spots, and occupy the whole width of the fore extremity of the caput; the interval between those of the hind-central pair is distinctly greater than that between each of them and the hind-lateral eye on its side, being nearly about equal to a diameter; those of the fore-central pair are contiguous to each other, and each is separated from the fore-lateral on its side by less than its own diameter. The direction of the lateral pairs is slightly oblique. The four central eyes form a square, whose fore side is rather shorter than the rest.

The legs are rather long, slender—4.1.2.3.—and furnished with hairs, and a few spine-like bristles.

The palpi are short and slender; the radial and cubital joints equal in length; the former very slightly produced and rounded at the fore extremity on the upper side, and furnished with bristly hairs, and the latter has a single, prominent, tapering, slightly sinuous bristle at the fore extremity of its upper side. The digital joint is small and of a narrow or somewhat oblong-oval form, rather exceeding in length the radial and cubital joints together, and clothed with bristly hairs, especially at the fore extremity. The palpal organs are not very complex; at their base on the outer side is a strong, bent, somewhat crescent-shaped, corneous process, the fore part being strongly emarginate, and at their extremity is a small, straight, sharp, black, thorn-like spine in contact with some semitransparent membrane.

The falces are vertical, tolerably long, but rather weak and divergent. The sternum is similar in colour to the abdomen, which last is clothed with strong bristly hairs.

The female resembles the male in general form and colours,

but is larger. The genital process is characteristic but not conspicuously prominent.

Two males and a female of this spider were found in a swamp near Bloxworth at the end of June, 1879.

The male may easily be distinguished from *Linyphia oblivia*, Cambr., *Linyphia oblita*, Ibid., and some other allied and rather obscure species, by the narrower form of the digital joints of the palpi.

LINYPHIA PRUDENS.

LINYPHIA PRUDENS, *Cambr.*, Trans. Linn. Soc. xxviii., p. 538, pl. xlv., fig. 9.

Length of the male $1\frac{1}{4}$ line. Female rather larger.

The profile of the cephalo-thorax of this spider is rounded, and there is a slight depression behind the occiput, the posterior slope being very gradual, but the general level of the caput and thorax are not very different. The colour of the cephalo-thorax, legs, palpi, falcēs, and maxillæ is pale, dull, orange-yellow.

The posterior row of eyes, looked at from in front, is rather strongly curved; the anterior row much less so, its central pair of eyes being placed a little above the straight line formed by the lateral eyes. The intervals between those of the posterior row are equal, and rather less than the diameter of one of the central pair, each of the latter being separated from the fore-central eye nearest to it by a rather less interval still. All are seated on small black spots; those of the lateral pairs are placed obliquely on a tubercle, and are the largest of the eight. The fore-centrals are smallest and contiguous to each other. All are of a pearly white excepting the fore-centrals which are dark grey. The height of the clypeus exceeds half that of the facial space.

The legs are slender, moderately long—4.1.2.3.—furnished with hairs and a few very fine spines.

The palpi are short; the radial joints are stronger than the cubital, and from the anterior margin of each, on the upper side,

issues a tolerably long, nearly straight, tapering, black bristle. The digital joint is of moderate size, of a yellow-brown hue, and has a small angular prominence near its base towards the outer side. The palpal organs are well developed, and moderately complex. At their base on the outer side is a large, conspicuous process of a subtriangular form, somewhat concave, and strongly emarginate at its base. The apex of the triangle is blunt-angular, and is close to the extremity, on the outer side, of the radial joint.

The falces are moderately strong, not very long, straight, and vertical, with a row of three small teeth on the inner side near the fore extremity.

The sternum is suffused with dusky blackish. The abdomen is of a dull yellowish-brown hue, sometimes suffused with blackish, particularly on the under side; its form is oval and it projects a little over the base of the cephalo-thorax. On the hinder half of the upper side a series of pale angular lines is occasionally visible, and it is thinly clothed with fine hairs.

The female resembles the male in colours and general characteristics, but the abdomen is much larger and more convex above; the process connected with the genital aperture is of a reddish hue, slightly prominent, and, as usual, very characteristic in form.

This spider belongs to the group comprising *Linyphia obliqua*, Cambr., and some other nearly allied spiders. It occurred among dead leaves, moss, and herbage in woods at Bloxworth, on the 12th of November, 1879. I had previously (1871) received it in some abundance from the Cheviot Hills.





APPENDIX, B.

Descriptions of Spiders found in Great Britain, but not yet met with in Dorsetshire.

There is little doubt but that many of the following species will be found in Dorsetshire, when numerous localities hitherto unsearched have been carefully worked at different seasons of the year.

FAMILY DYSDERIDES.

GENUS SCHÆNOBATES, *Blackw.*

It is doubtful whether this genus should not be removed to the *Theridiides*, next to *Nerine* and *Walckenaëra*, to which it bears a very close resemblance, differing chiefly in *having but six eyes*. As, however, I have not had an opportunity of examining the spider upon which the genus has been established, I leave it provisionally in the family in which it was originally placed by Mr. Blackwall.

SCHÆNOBATES WALKERI.

SCHÆNOBATES WALKERI, *Blackw.*, Spid. Gt. Brit. and Irel., p. 376.

Adult male length 1-8th of an inch.

Cephalo-thorax red-brown, marked with several converging rows of white, iridescent, squamoso hairs on the sides. The radial joint of the palpus has a small pointed apophysis at its outer extremity; digital joint oval; palpal organs prominent,

but not very complex. Abdomen oviform, dark brown and yellowish brown intermixed; covered with white iridescent squamose hairs; and directly above the spinners is a spot of dense white hairs.

Found in the month of September many years ago at Broadstairs, in Kent.

GENUS SEGESTRIA, *Latr.*

SEGESTRIA FLORENTINA, *Rossi.*

SEGESTRIA PERFIDA, *Walck., Blackw.*, l.c., p. 373, pl. xxviii., fig. 269.

Length of the male nearly 3-4ths of an inch.

Easily distinguished from our other indigenous species by its larger size, and by the brilliant glossy green colour of the falces.

Found at Plymouth, on the authority of the late Dr. Leach (Supplement to Encyclop. Brit. Ed. 4, 5, and 6, Art Annulosa). Abundant in Spain and Southern Europe, in holes and crevices of walls, trees, &c. (I have not yet seen a British example.)





FAMILY DRASSIDES.

GENUS DRASSUS, *Walck.*

DRASSUS FERRUGINEUS.

DRASSUS FERRUGINEUS, *Blackw.*, l.c., p. 117, pl. vi., fig. 71.

Length of the female about $\frac{1}{2}$ inch.

Cephalo-thorax narrow, and with the legs of a ferruginous hue. Abdomen somewhat cylindrical, cream-coloured, with a narrow spear-shaped dark marking on the upper side along the middle of the fore part, and three impressed spots on each side of it.

Found near Belfast, Ireland. (I have not seen this spider, of which the type is not now in existence).

DRASSUS RETICULATUS.

DRASSUS RETICULATUS, *Blackw.*, l.c., p. 112.

Cephalo-thorax pointed in front, yellow-brown; falces red-brown, legs yellow-brown, hairy, and armed with a few spines. Abdomen elongate-oval; pale olive-brown, reticulated with fine, dull, yellowish-white lines; spinners prominent, cylindrical. Found near Lancaster.

(Type specimens lost. I have not seen this spider.)

DRASSUS SYLVESTRIS.

DRASSUS SYLVESTRIS, *Blackw.*, l.c., p. 113, pl. vi., fig. 68.

Length of the female 2-5ths of an inch, male smaller.

Cephalo-thorax and legs reddish-brown. Falces strong,

prominent at their base in front, rather projecting and deeper coloured than the cephalo-thorax. Abdomen oblong-oval, olive-greenish brown; a deeper coloured, tapering band runs along the middle of the fore part of the upper side, for two-thirds of its length, and is followed by a series of obscure, hoary, angular lines. Spinners prominent, cylindrical.

Cubital and radial joints of the male palpus short, the radial has two apophyses at its extremity; one, short and broad, on the inner side; the other in front, long, compressed at its extremity, overlapping the base of the digital joint, which is oval. Palpal organs complex, with several strong, curved, pointed processes at their extremity.

Found in Berwickshire in spring-time. (I have never seen this spider.)

DRASSUS CUPREUS.

DRASSUS CUPREUS, *Blackw.*, l.c., p. 114., pl. vi., fig. 19.

Similar in size to the foregoing.

The cephalo-thorax and legs are reddish-brown, and the abdomen bright reddish-copper colour with a broad tapering blackish (but often nearly obsolete) band along the middle of the fore part of the upper side. Radial joint of palpus of male longer than the cubital, with a pointed apophysis at its outer extremity and a much smaller one beneath. Digital joint oblong-oval. Palpal organs, situated beneath the base of the digital joint, simple, with a small dark protuberance near their extremity towards the outer side, and a fine pointed spine opposite to it on the inner side. Found in various parts of England.

(This spider is unknown to me. I believe it to be distinct

Drassus reticulatus, *Blackw.* (p. 460). The following additional particulars of this spider, accidentally omitted at p. 460, should be noted.

Length of the adult female 2-5ths of an inch. Eyes in two nearly parallel rows; those of the hind-central pair are the smallest, and are nearer to each other than each is to the lateral eye of the same row on its side; the fore-central pair are much the largest of the eight, and, with the hind-centrals, form a square. The genital aperture is minute and has a reddish-brown tint.

from, though nearly allied to, *D. lapidicolens*, Walck., to small examples of which it must be exceedingly similar, inasmuch as Mr. Blackwall, some years ago, returned to me several examples of that species labelled *Drassus cupreus*.)

GENUS GNAPHOSA, Latr.

GNAPHOSA LUCIFUGA. ?

DRASSUS LUCIFUGUS, Blackw., l.c., p. 105, in part.

DRASSUS MELANOGASTER, Latr., Leach, Encyclop. Brit. 4th, 5th, and 6th Ed. Art. Annulosa.

It is impossible to conjecture with any certainty what this spider may be. Mr. Blackwall's figure and description of the male are taken from those of *Pythonissa lucifuga*, C. L. Koch (Die Arachn, Bd. vi., p. 54, pl. 194, figs. 468, 469 and 470), and probably those of the female also. It is, I think, certainly quite distinct from *Gnaphosa anglica*, Cambr., as well as from *G. lugubris*, C. L. Koch, with a female of which last species Mr. Blackwall (who received it from me) supposed it to be identical. If Dr. Leach's spider be indeed a *Gnaphosa*, the recurved form of the posterior row of eyes will at once give evidence of it. No particular locality is given; only that it "has been found in England under stones."

GENUS PROSTHESIMA, L. Koch.

PROSTHESIMA ELECTA.

MELANOPHORA ELECTA, C. L. Koch., Die Arachn., Bd. vi., p. 83, pl. 200, fig. 490.

DRASSUS FUMILUS, Blackw., l.c., p. 108, pl. vi., fig. 65.

Rather smaller than *Prosthesima nigrita*, Fabr. (p. 16), and easily distinguished by the colour of the legs, the femora of which are yellowish red, the genua and tibiae black or black-brown, and all the metatarsi and tarsi red-brown. The cephalo-thorax is rather

pointed in front, and of a red-brown colour. Abdomen black, flattish, and very hairy; the legs rather short and robust. The sexes are alike in colours.

The radial joint of the male palpus has a strong, tapering sharp-pointed apophysis at its outer extremity; the digital joint is of moderate size, and the palpal organs are simple, with two or three not very conspicuous processes at their fore extremity.

I met with both sexes of this spider in 1859 on the sand hills near Southport, Lancashire, in early summer, running in sunshine. I have also more recently received it from Lord Walsingham, by whom it was found near Merton Hall, Norfolk.

PROSTHESIMA LUTETIANA.

MELANOPHORA LUTETIANA, *L. Koch*, Die. Arachn. Fam. der.

Drassiden, p. 15, pl. vi., fig. 100.

Adult female, length 3 lines.

Nearly allied to *Prosthesima nigrita*, Fabr., but larger. The cephalo-thorax is deep brown, the legs are of a rather lighter colour, with the extremities gradually paler still, and of a reddish-brown hue. The abdomen is dark blackish-brown, the pubescence being apparently of a somewhat yellow-brown tint. The form of the genital aperture bears some resemblance to that of *P. nigrita*, but is still noticeably distinct, consisting of a longitudinal channel or furrow which divides abruptly, at its posterior extremity, into two strongly divergent portions of equal size.

An example of this spider was sent me lately from Dunnoon, Scotland, by Mr. H. C. Young, of Glasgow; and several others immature, but considered by Mous. Simon to be probably of this species, were received some years ago from Mr. W. Farren, by whom they were found in Wicken Fen, Cambridgeshire.

GENUS CLUBIONA, *Latr.*

CLUBIONA FORMOSA.

CLUBIONA FORMOSA, *Blackw.*, l.c., p. 125, pl. vii., fig. 78.

This is a doubtful species, found at Cranmore, in Ireland, by Mr. R. Templeton. It is of about the same size as *Clubiona terrestris*, Westr. (p. 23), and is no doubt nearly allied to that and to some others, as *C. lutescens*, Westr. (p. 24) and *C. grisea*, L. Koch (p. 22).

The female only is yet known. Perhaps the discovery of the male may prove it to be distinct from those mentioned. I have not myself seen an authenticated example of *Clubiona formosa*.

GENUS CHIRACANTHIUM, *C. L. Koch.*

CHIRACANTHIUM ERRATICUM.

CLUBIONA ERRATICA, *Blackw.*, l.c., p. 135, pl. viii., fig. 86.

The chief distinctions supposed to separate this spider from *C. carnifex* (p. 32) consists of a distinct, yellow, oblique line on each side of the abdomen, and the simple-pointed extremity of the radial apophysis of the male palpus;* this apophysis in *C. carnifex* being notched, or bifid at its extremity. Found in Wales and Northamptonshire. I have also met with females of it near Oxford.

CHIRACANTHIUM PENNYI.

CHIRACANTHIUM PENNYI, *Cambr.*, Trans. Linn. Soc. xxviii., p. 533, pl. xlv., fig. 6.

Differs from *Chiracanthium erraticum*, Bl., and *C. carnifex*, Fabr.,

* Mr. Blackwall is confident that the radial apophysis in his *Clubiona erratica* is not notched at its extremity, and that the oblique lines on the abdomen are a distinguishing character. I have, however, lately (May 19, 1880) found (at Bloxworth) a male and female in which these lines are very vivid, and the radial apophysis is distinctly notched. I think, therefore, that most probably the former character is not specific, and the latter must have been overlooked by Mr. Blackwall. The notch is not easy to be seen in all positions.

in the form of the digital spur of the male palpus. In *C. Pennyi* this spur is longer, more regularly curved, and of more uniform strength from base to extremity, which last does not taper off sharply, but gradually to a rather obtusely-pointed termination, and is also less directed outwards than that of *C. carnifex*.

Found at Wokingham, and kindly sent to me by the Rev. C. W. Penny, of Wellington College.





FAMILY DICTYNIDES.

GENUS DICTYNA.

DICTYNA VARIABILIS.

DICTYNA VARIABILIS, *C. Koch*, *Die. Arachn.*, Bd. iii., p. 29, pl. 83, fig. 187.

ERGATIS PALLENS, *Blackw.*, l.c., p. 148, pl. x., fig. 9.

Easily distinguished from all the other British species by the bright pinkish-yellow colour of the abdomen, which is mottled with darker but indistinct markings. The cephalo-thorax is reddish-yellow, and the legs are of a uniform and rather paler hue. The cubital joint of the male palpus has a short, strong, pointed spur at the outer side of its fore extremity.

Ergatis pallens Blackw. is a variety of the female in which the abdomen is yellowish-white, with a large, dark pink spot on the middle of the upper side.

Found by myself at Lyndhurst, Hants, and subsequently received from the neighbourhood of Exeter, from Mr. E. Parfitt. I have also received it from Surrey; and it was sent to me in 1878 from Codford, Wiltshire, by my cousin, the late Colonel Pickard, R.A., V.C., &c.

DICTYNA LUGUBRIS.

DICTYNA LUGUBRIS, *Cambr.*, *Journ. Linn. Soc.* xi., p. 535, pl. xiv., fig. 4.

Length of the male nearly $1\frac{1}{2}$ lines.

Nearly resembles in form and structure *D. arundinacea*, Linn. (p. 49), but may be at once distinguished by its larger size and almost uniform dark brown and black hue.

Cephalo-thorax red-brown, clothed with numerous greyish-white squamose hairs.

Legs slender, moderate in length 1.2.4.3.; colour dull brownish; femora darker than the tibiae; metatarsi and tarsi dull yellowish.

Palpi nearly similar to the legs in colour, radial slightly, if at all, longer than cubital, but less strong; it is devoid of any apophysis at its fore extremity, but has, a little nearer to its hinder extremity, a small, black, sharp-pointed, tooth-like spine, or hook directed downwards; digital joint longer than the radial and cubital together; roundish-oval at its base, and drawn out anteriorly. Palpal organs very similar to those of *D. arundinacea*.

Falces also similar to those of others of the genus, but of a more exaggerated size and form, and their front surface mostly covered with small blackish tubercles, giving them a rough, granulose appearance.

Abdomen black, with four small, red-brown, impressed spots forming a quadrangular figure near the middle of the upper side.

A single example was received from the late Mr. R. Beek among a number of spiders collected in various parts of England; some of them being at the time supposed to have been collected on the Continent of Europe. I have, however, since describing the above spider (Journ. L. S., l.c.), become convinced that the whole collection was made in England. *Dictyna lugubris* must, therefore, be placed on our list of indigenous spiders. I met with several examples of it at Corfu, in May, 1864.

GENUS LETHIA, *Menge*.

LETHIA SUBNIGER:

DRASSUS SUBNIGER, *Cambr.*, Ann. and Mag. N.H., Juno, 1861.

LETHIA SUBNIGER, *Cambr.*, l.c., October, 1875, s. 4, vol. 16, p. 246.

Length of the male 1-12th of an inch.

Cephalo-thorax deep rich blackish-brown. Legs rather robust, hairy, and of a dull yellowish-brown colour, palest at the joints;

relative length 1.4.2.3. Palpi short; radial joint smaller than the cubital, with a bluntish apophysis at its extremity on the upper side; digital joint large, oval; palpal organs very prominent, with a projecting process at their base, from the outer side of which issues a black spine curving across the middle to the inner side.

Abdomen small, oviform; very deep brown, approaching to black; clothed with hairs, of which some are of a pale whitish colour.

Found among rubbish in an old hedgerow on Hursley Down, near Winchester, in May, 1860, and closely allied to *Lethia albispiraculis*, Cambr. (p. 53), but among other distinctions its cephalo-thorax is broader in proportion to its length, than in that species. In the original description of this spider (Ann. and Mag. N.H., 1861) the legs are stated to be "furnished with a few spines." I think this is a mistake, at any rate I cannot now discern traces of spines, though the specimen has been subjected to rather rough usage since that description was made.

LETHIA SPINIGERA, sp. n.

Adult male, length 1-14th of an inch.

The cephalo-thorax is oval, broadly truncated behind, and moderately convex above; the profile line to the hinder slope is even, and forms only a slight curve, the hinder slope tolerably abrupt, and the lateral marginal constrictions at the caput are very slight. Its colour is a dark yellowish-brown, with deeper converging lines, and a few prominent bristly hairs in the medial line. The height of the clypeus (which is very low) appears to be rather less than half that of the facial space.

The eyes are small, subequal, and closely grouped together, in two parallel, transverse, contiguous lines. The interval between those of the hind-central pair, which are smaller than the hind-laterals and of a somewhat misshapen form, is equal to rather more than a diameter, and each is contiguous to the hind-

lateral eye on its side. Those of the anterior row are all contiguous to each other.

The legs are moderately long, but not greatly different in their length; (4.1.2.3.) rather slender, and of a yellowish-brown hue; the femora, particularly those of the first pair, strongly tinged with blackish-brown. They are furnished with hairs, and near the middle of the under side of the tibiæ of each of those of the third pair is a longish, strong, slightly curved, prominent, dark, spur-like spine directed backwards; there are also two short black spines in a longitudinal line beneath the metatarsi of the first pair.

The palpi are short, the cubital joint is thickly furnished in front with short, strong, bristly hairs; the radial joint is about the same length, but rather less strong, and has its extremity on the outer side produced into a short obtuse apophysis. The digital joint is rather large and tapers to a point; the palpal organs are well developed but simple, and have a longitudinal, curved spine, closely connected with them, and, apparently issuing from their base on the outer side, owing, however, to the cramped position of these parts it was difficult to observe them very closely, without injury to the specimen. The colour of the palpi is dull yellow-brown, the humeral joints tinged with black-brown, and the digital joints dark-brown.

The falces are moderately long, not very strong, and slightly divergent at their extremities; their colour is similar to that of the cephalo-thorax.

The maxillæ and labium are yellow-brown, slightly tinged with reddish-brown, and the sternum is similar to the cephalo-thorax in colour.

The abdomen is of a narrow-oval form, rather longer than the cephalo-thorax; it is of a deep brown colour, thickly mottled with minute, dull, reddish-yellow spots, and some short, similarly-coloured lines, which chiefly form the ordinary transverse angular bars on the hinder half of the upper side. Close in front of the ordinary spinners, which are of a dull, pale, brownish-yellow hue, is the characteristic, transverse, super-

numorary spinning organ. The abdomen is thinly clothed with short, strong, hairs.

This very distinct little spider is allied to *Lethia albispiraculis*, Cambr., p. 53, but besides being a smaller and more slenderly-made spider, the position of the eyes and the *strong spine on the tibiae of the third pair of legs*, with the two shorter ones on the metatarsi of the first pair, render it easily distinguishable. These spines are in fact abnormal to the genus altogether, as at present characterised, but would hardly I conceive render it necessary to exclude it.

A single example was kindly given to me by Mr. F. M. Campbell, of Hoddesdon, where it was found by that gentleman in his dwellinghouse at the end of January, 1880.

LETHIA PATULA.

DIOTYNA PATULA, *Sim.*, Arachn. de Franco, tom. 1., p. 197.

LETHIA PATULA, *Cambr.*, Ann. and Mag. N.H. 5 s., vol. 1., p. 108.

Length of the female 2 lines.

Very nearly allied to *Lethia puta*, Cambr. (p. 53), resembling it closely in general form, colours, and appearance; but considerably larger. The form also of the genital aperture is quite different.

Found by Mons. Simon in June and July, 1870, among grass and débris of old furze bushes on the Downs near Newhaven. Sussex.





FAMILY AGELENIDES.

GENUS ARGYRONETA, *Latr.*

This genus was included among the *Drassides* by Mr. Blackwall; but the possession of *three* instead of *two* terminal tarsal claws sufficiently separate it from that family. One species only is as yet recorded.

ARGYRONETA AQUATICA.

ARANEUS AQUATICUS, *Clerck*. Sv. Spindl. p. 143, pl. vi., tab. 8.

ARGYRONETA AQUATICA, *Blackw.*, l.c., p. 137, pl. viii., fig. 87.

The length of the male varies from 6 to 10 lines. Female smaller.

Cephalo-thorax, legs, and palpi dark reddish-brown, thickly clothed with long yellowish-brown hairs. Spines only on the two hinder pairs; relative length of legs 1.4.3.2. Abdomen very convex in front, sloping quickly to the spinners; and of an olive-brown colour, clothed with short yellowish-brown hairs. Falces deep red-brown, long, strong, and rather divergent; digital joint of the male palpus drawn out into a long cylindrical form. Palpal organs, situated beneath the oval base of the digital joint, and simple structure.

This fine, but plainly-coloured and well-known spider—the only one of the genus yet discovered—cannot be mistaken for any other. Its habitat is chiefly in pools of still water, in ponds and ditches; beneath the surface of the water it passes most of its existence, and forms its curious dome-shaped silken nest. It is enabled to breathe under water from a supply of air enclosed around it by means of its hairy clothing. This air-bubble

gives it an appearance of being enclosed within a metallic silvery ball, and renders it an interesting and pretty object for an Aquarium. When living at Durham many years ago, I kept an adult male of this spider in a small tank for three years. It would occasionally, at night, come out of the water and wander about the room. During one of these excursions it probably received some injury as I found it next day in a dying state.

Argyroneta aquatica is abundant in many parts of England, and probably will be found some day in Dorsetshire. Hitherto, however, I have had but little opportunity of searching suitable localities for it.

GENUS COELOTES, *Blackw.*

COELOTES? IMMACULATUS.

COELOTES? IMMACULATUS, *Cambr.*, Trans. Linn. Soc. xxviii., p. 444.

Length of the female 1-4th of an inch.

The cephalo-thorax, legs, palpi, and falces are bright reddish-yellow-brown. Abdomen pale whitish clay-yellow.

The spines on the legs consist chiefly of two parallel rows of long ones beneath the tibiae and metatarsi. The terminal tarsal claws are three in number. Spinners short and of nearly uniform length.

A very distinct spider, but its generic position is still uncertain.

Found in Wicken Fen, near Cambridge.

GENUS AGELENA, *Walck.*

AGELENA HYNDMANNII.

AGELENA HYNDMANNII, *Blackw.*, l.c. p. 154, pl. x., fig. 98.

Length of the female 1-6th of an inch.

Cephalo-thorax brownish-green, much the darkest on the caput; thorax marked with dark converging lines.

Legs spiny, hairy, greenish-brown, with darker annuli; relative length 4.1.2.3.

Abdomen deep green, with a central, longitudinal, dentated, pale fascia, marked at its fore extremity with a black or dark green lanceolate longitudinal marking.

Found at Cranmore, Ireland, among grass. (I have never seen this spider.)

AGELENA PROMPTA.

AGELENA PROMPTA, *Blackw.*, l.c., p. 156.

Length of the female 1-10th of an inch. Male rather smaller.

Cephalo-thorax slightly compressed on the sides in front; colour brown, darkest in front. Falces strong; reddish-brown.

Legs brown, relative length 4.1.2.3.

Abdomen dark brown above with a longitudinal central series of strongly marked yellowish-brown angular lines. Sides and under part pale yellowish-brown, the latter with a longitudinal central deeper band. Upper pair of spinners much the longest, and tri-articulate. The cubital joint of the male palpus has a slender curved process on the outer side of its upper part; and the radial has a longer, more slender and more curved one tapering from a prominence at the outer side of its extremity.

Digital joint oval; palpal organs simple in structure, and almost encircled by a fine black spine.

Found by Mr. Blackwall under stones in woods at Llanrwst, North Wales, in October. (I have never been fortunate enough to obtain an example of this spider.)

GENUS TEGENARIA, *Latr.*

TEGENARIA GUYONII.

TEGENARIA GUYONII, Guérin-Méneville, *Iconogr. de Règne, Anim. Arachn.*, p. 7, pl. ii., fig. 1.

„ DOMESTICA, *Blackw.*, l.c., p. 163, pl. xi., fig. 105.

Length of the female 3-4ths of an inch, male rather smaller.

This spider is nearly allied to *Tegenaria atrica*, C. L. Koch (p. 62), but may be easily distinguished by its much longer legs, less distinctly and differently marked abdomen, and rounder thorax.

The legs, also, are annulated, and furnished with longer hairs, and the palpi differ in structure. It is also more exclusively a House-spider.

Abundant at Oxford in cellars, and in old cupboards and dark corners of unused rooms; found also in the London district and in Cambridgeshire. It is probably the spider which has been (inaccurately) stated to be peculiar to Hampton Court, under the name of "The Cardinal." A tradition exists that this spider terrified Cardinal Wolsey, and hence obtained its trivial name.

GENUS CRYPHOECA, *Thorell*.

CRYPHOECA SILVICOLA.

TEGENARIA SILVICOLA, *Blackw.*, l.c., p. 168, pl. xii., fig. 108.

HAHNIA SILVICOLA, *C. Koch*, *Dio Arachn.* xii., p. 158, tab. 432, figs. 1076 and 1077.

Length of the female 1-8th of an inch; male rather smaller.

Cephalo-thorax pale brown, with narrow, dark brown margins, and converging lines of the same colour on the sides of the thorax.

Legs moderate in length, relatively 4.1.2.3., yellow-brown, annulated and marked with brownish-black.

Palpi yellow-brown.

Abdomen dark brown above, with a central, longitudinal series of angular lines, often coalescing so as to form a broad, longitudinal, dentated, yellow-brown band, at the fore extremity of which is a longitudinal, tapering blackish stripe. Sides dark brown mottled with yellow-brown; under side yellowish-brown with three, not very distinct, longitudinal dark brown bands.

The radial joint of the male palpus has a strong prominent

dark brown apophysis at its base on the outer side, of a somewhat obtusely-pointed oval form, and a smaller, darker, pointed one at its extremity in front.

The digital joint is large, oval, dark brown. The palpal organs prominent, moderately complex and nearly surrounded by a black, filiform spine.

Abundant under stones, especially of wall-fences, in Scotland, in the month of July. Also found, but very rarely, in Norfolk and in Buckinghamshire.





FAMILY THERIDIIDES.

GENUS THERIDION, *Walek.* and *Blackw.* (in part).

THERIDION PICTUM.

THERIDION PICTUM, *Hahn*; *Blackw.*, l.c., p. 184, pl. xiii., fig. 117.

Closely allied to, but much larger than *T. varians* (p. 87), easily distinguished by its brighter colours and more distinct markings. The denticulated central abdominal band is bright red, or red-brown, with a distinct yellow, marginal border, and its denticulations are long and sharp.

This beautiful species occurs in abundance in greenhouses, and on holly and other bushes, in gardens, at Southport, Lancashire. It has been found at Richmond, and I have met with it at Oxford, in the garden and greenhouse of Professor Westwood, and have also received it from Scotland.

THERIDION VENUSTUM.

THERIDION VENUSTUM, *Walek.*; *Cambr.*, Trans. Linn. Soc. xxvii., p. 422.

Cephalo-thorax yellow, with a broad, dark, blackish, central, longitudinal band and black narrow margins.

Legs and palpi immaculate, pale yellowish. Legs rather short, 1.4.2.3.

Abdomen subglobose. A broad, tapering, white, central band along the upper part has on each side of it a longitudinal row of large black-brown blotches on a reddish-yellow ground. Sides yellowish, marked and spotted with white. The under side is also yellowish, with a broad curved blackish transverse band near the middle, the convexity of the curve directed backwards.

An immature example—rather less than one line in length—was sent to me from near Exeter by Mr. Edward Parfitt, and is, I believe, the *Theridion venustum*, of Walckenaëra, (Ins., Apt. ii., p. 316). The colours had evidently somewhat faded before the spider came into my hands.

THERIDION TRISTE.

THERIDION TRISTE, C. L. Koch ; *Blackw.*, Ann. and Mag. N.H.,
Sept., 1867.

Nearly allied to *Steatoda coracina*, C. L. Koch (p. 98), but entirely black and easily distinguished from that spider by its black, instead of pale, tarsi.

Found in North Wales by Mr. Blackwall; but no British example has yet come under my own inspection.

THERIDION AURATUM.

THERIDION AURATUM, *Blackw.*, Spid. Gt. Brit. and Irel., p. 198,
pl. xiv., fig. 128.

Immature male length 1-8th of an inch.

Cephalo-thorax "obcordate, and carinated before" (*i.e.*, rounded behind and rather narrow in front), glossy, and with the legs, chestnut-black. Abdomen globular, golden-yellow, studded with short stiff dark brown hairs, most thickly grouped along the middle of the fore part on the upper side, and also on the sides, giving the former the appearance of a broad longitudinal brown band. Underneath, also, is a broad central, longitudinal dark brown band.

Found at Cranmore, in Ireland, by Mr. R. Templeton. (I have not seen this spider.)

THERIDION ALBENS.

THERIDION ALBENS, *Blackw.*, l.c., p. 199, pl. xiv., fig. 130.

Length of the female 1-16th of an inch.

This small *Theridion* is closely allied to *Theridion pallens*, *Blackw.* (p. 92), even if it be not merely a variety of that species. It

is of an almost uniform whitish colour, with a broad, central, longitudinal, darkish band on the cephalo-thorax, and a small oblique oval marking, formed by a fine black line, on the middle of the upper part of the abdomen, on each side of the medial line.

A single example found by Mr. Blackwall among strawberry plants in his garden in North Wales.

I have not seen this spider, of which the type specimen no longer exists. It formerly occurred to me that possibly *Theridion albens* might be only a variety of *Theridion pallens*, Blackw. ; but further consideration leads me to believe that Mr. Blackwall could hardly have mistaken a mere variety of *Theridion pallens* (with which he was so well acquainted) for a distinct species.

GENUS DIPCENA, Thorell.

Closely allied to *Theridion*, but of a stouter form, and has distinct and strongish spines on the legs, which are also stouter than those of *Theridion*.

DIPCENA MELANOGASTER.

ATEA MELANOGASTER, *C. Koch.*, Die. Arachn. xi., p. 143, pl. 392, fig. 941-42

THERIDION CONGENER, *Cambr.*, Zoologist 1863, p. 8576.

Length of the female 1-9th of an inch.

Cephalo-thorax deep shiny black-brown. Clypeus high, and prominent below. Legs short, stout, and armed with spines; relative length 1.4.2.3, pale yellow, blotched and annulated with black and yellow-brown. Palpi like the legs. Abdomen broad in front, very Epëiriform; yellowish above, thickly mottled and suffused with yellow-brown, and marked with numerous black dots and points, forming a series of five or six obscurely-defined, transverse, angulated stripes, which comprise the principal black spots, those being the largest (and as if confluent) at the angle of each stripe. Sides towards the front black, with an

under edging of yellow ; beneath the fore part, as well as on the under side, the abdomen is also black.

The abdomen of the male has, on the upper side numerous minute black tubercles, and some long, strong, spine-like bristles. The digital joint of the palpus is large, oval ; the palpal organs compact, but rather complex.

Found in July, 1858, at Lyndhurst, Hants.

GENUS STEATODA, *Sund.*

STEATODA ? HÆMATOSTIGMA.

THERIDION HÆMATOSTIGMA, *Blackw.*, l.c., p. 198, pl. xiv., fig. 129.

Length of the female 1 line.

Cephalo-thorax pale brown, with a faint dark marginal line, and dark converging lines on the thorax. Legs moderately long, very hairy, and similar to the cephalo-thorax in colour. Abdomen oval, dark grey, approaching to black on the upper part, on which is a broad, longitudinal, central, pale, or white band, containing an impressed reddish spot, about one third of the length from the fore extremity, and emitting several short, narrow, pale stripes on either side of its hinder half ; the under side is grey, edged by a double black line, enclosing a white space.

Common in dark walks at Cranmore, Ireland. (*R. Templeton*, M.S.).

I have not seen this spider, which, it seems to me, is most probably a *Steatoda*, rather than a *Theridion* sensu stricto.

STEATODA VERSUTA

THERIDION VERSUTUM, *Blackw.*, l.c., p. 193, pl. xiv., fig. 124.

Length of the male nearly $\frac{1}{4}$ th of an inch.

Cephalo-thorax reddish-brown ; legs long, 1.4.2.3., yellowish brown. Radial joint of palpus stronger than the cubital, and produced in a rounded form on its outer side ; palpal organs rather complex, with a prominent process on the inner side, and a strong, curved spine at their extremity. Abdomen oval, black above,

with a large, white, crescent-shaped marking at the fore extremity, and three longitudinal rows of white spots, which diminish in size towards the spinners.

A fine and very distinct spider, totally unlike anything else hitherto found in Britain.

Found near Winchester in the month of July.

STEATODA CLARKII.

STEATODA CLARKII, *Cambr.*, Ann. and Mag. N.H., 1879, ser. 5, vol. iv., p. 193.

Length of an immature female 2 lines.

Cephalo-thorax constricted laterally on the margins at caput, and of a yellow-brown colour.

Eyes rather large and closely grouped in a transverse, oval figure; those of the hind-central and lateral pairs nearly equal in size, and pearly white; those of the fore-central pair dark coloured, further apart than those of the hind-central pair, but forming a line of nearly about equal length; those of the hinder row are equidistant from each other, separated by intervals of less than an eye's diameter; and the four centrals form a square.

Legs short, 1.4.2.3., tolerably strong, and of a brownish-yellow colour. Abdomen oval, tolerably convex above, and projecting a good deal over the base of the cephalo-thorax. Colour brownish-yellow-white on the upper side, with a broadish submarginal band of red-brown, interrupted at the fore extremity, and at three other places on each side, by transverse brownish-yellow distinct lines. Sides and underpart brownish-yellow, the former marked and spotted with reddish-brown near the posterior extremity. Sternum dark yellow-brown.

A single example of this very distinct species was received some years ago, among many other spiders, from the late Rev. Hamlet Clark, by whom it was found near Torquay. Owing to having been accidentally mislaid it has until very lately, escaped notice.

GENUS EURYOPIS MENGE.

EURYOPIS PRONA.

STEATODA PRONA, *Cambr.*, Trans. Linn. Soc. xxx., p. 324.

THERIDION PRONUM, *Cambr.*, l.c. xxviii., p. 535.

PACHYDACTYLUS PRONUS, *Menge*, Preuss. Spinn. 177, pl. 33, fig. 80.

Length of the male 1-10th of an inch. Female rather larger.

Cephalo-thorax round-oval, of great, but uniform, convexity; normal grooves and indentations obsolete; ocular area small, horizontally prominent. Colour yellow-brown, strongly suffused with a darker hue. Clypeus of great height, and projecting at its lower margin. Falces very small. Legs short, 1.4.2.3, dull yellowish, or yellow-brown; tibiæ strongly suffused with dark-brown, as also are the metatarsi of the fourth pair. The palpi of the male, similar to the legs in colour, and rather long; cubital joint short and tumid; radial smaller; digital large, oval, dark-brown. Palpal organs prominent, rather complex, but compact, and directed outwards. Abdomen oval, very convex above, and obtuse at each end, of a blackish brown colour, clothed with short pale hairs. Spinners of about equal length; but those of the inferior pair are greatly the strongest.

Found in June, 1870, near Newhaven, Sussex, on furze bushes when in bloom, as well as among the stems and at the roots of low herbage. It is nearly allied to *Euryopsis inornata*, *Cambr.* (p. 100), but is rather larger and is of a much duller colour; the eyes also are smaller, and the palpi longer; the digital joints being smaller, and the palpal organs rather different in structure.

EURYOPIS BLACKWALLII.

THERIDION BLACKWALLII, *Cambr.*, Trans. Linn. Soc. xxvii., p. 419, pl. 55, No. 16.

Adult male length 1-10th of an inch.

Allied to *Euryopsis inornata*, *Cambr.* (p. 100), but larger. Cephalo-thorax bright yellow-brown; abdomen black on the upper side,

with a pale, white-spotted, marginal band surrounding two-thirds of its length from the fore extremity; and a similar, longitudinal, central, dentated band reaches to the spinners, just above which is a conspicuous white spot. Upper surface of the abdomen covered with minute, shining, yellow-brown tubercles.

Legs rather short, 1.4.2.3., yellow, faintly, but broadly, annulated with orange-brown. Cubital joint of palpus bent, and enlarged at its fore extremity, which bears a long, prominent bristle; radial joint short, produced at its outer extremity, which is furnished with some bristly hairs; digital joint very large; palpal organs very prominent, directed outwards, and not very complex.

Found in 1869 by Mr. W. Farren in Wicken Fen, near Cambridge, and also subsequently by myself at Oxford.

? EURYOPIS FUSCA.

THERIDION FUSCUM, *Blackw.*, l.c., p. 197.

Length of the female 1-16th of an inch.

Cephalo-thorax very convex immediately behind the eyes; thorax depressed. Abdomen subglobose, somewhat depressed, glossy, and projecting greatly over base of cephalo-thorax. Legs robust, 1.4.2.3., furnished with hairs, and a few fine spines. The whole spider is of a dark reddish-brown colour, with some obscure spots of a deeper shade on the abdomen.

Found on railings, and under stones in pastures, towards the close of the year, near Llanrwst, North Wales.

The genus of this spider, which I have never seen, appears to be rather doubtful.

GENUS NERIENE, *Blackw.*

NERIENE PROMISCUA.

NERIENE PROMISCUA, *Cambr.*

Rather smaller than *Nerienne dentipalpis*, Wid. (p. 108), to which, as well as to *Nerienne longipalpis*, Sund. (p. 107), and *Nerienne atra*, Blackw. (p. 106), it is nearly allied and bears strong

resemblance, both in colour and structure. From the first of the above-named spiders it differs in the much narrower radial joint of the male palpus, resembling it, however, in having a small tooth-like spine beneath that joint; this spine also at once distinguishes it from the two latter species.

Found in Scotland, North Wales, Yorkshire, and near Brighton.

NERIENE PASCALIS.

NERIENE PASCALIS, *Cambr.*, Trans. Linn. Soc. xxviii., p. 542, pl. 46, fig. 12.

Adult male, length 1 line.

The cephalo-thorax much resembles in form that of *Nerience longipalpis* Sund. (p. 107).

Eyes of fore-central pair as large as those of the hind-central.

Legs not very long, 1.4.2.3; moderately strong.

The whole of the fore-part of this spider is of a dull, greenish yellow-brown hue. The abdomen sooty black and glossy. Radial joint of palpus much stronger than the cubital, and equally produced both before and behind, being bluntish pointed at its upper fore extremity, and its outer margin strongly emarginate. Digital joint large, oblong-oval, equal in length to (or exceeds) the humeral joint. Palpal organs not very complex.

Found near Dunkeld, Scotland.

NERIENE TIBIALIS.

NERIENE TIBIALIS, *Blackw.*, l.c., p. 266.

Length of the male 1 line.

This spider is closely allied to *Nerience nigra* Blackw. (p. 109). and closely resembles it both in colours, form, and general structure. It may, however, be distinguished readily by the strong and very conspicuous incrassation of the tibiæ of the first pair of legs.

Found in North Wales, under stones, in March; and also on the Cheviot Hills, Scotland.

NERIENE CURTIPES.

NERIENE CURTIPES, *Cambr.*, Proc. Berwickshire Nat. Hist. Club
vii., p. 314.

Length of the male 1 line.

Cephalo-thorax deep shining black-brown. Occipital region of the caput rather elevated, rounded, and furnished with a few hairs. Ocular region a little prominent. Clypeous prominent below, its height exceeding half that of facial space.

Legs short, 1.4.2.3, slender, yellowish red-brown; palpi short, and similar to the legs in colour; radial joint stronger than the cubital, with its upper and outer sides slightly emarginate, leaving a small, prominent, obtuse point at the middle of the fore extremity. Digital joint large, and of a regular oval form; palpal organs compact, and not very complex; a strong, dark, brown, spiny process curves closely round their inner margin, from the outer side of their base to the fore part of the inner side, where it is met by the point of a slender filiform black spine, which issues from near their fore part on the outer side, and traverses them in close contact, in a directly transverse direction.

Abdomen obscure greenish black, the cuticle having a semi-coriaceous and slight punctuose appearance.

Found in Berwickshire.

NERIENE RUDIS.

NERIENE RUDIS, *Cambr.*, Ann. and Mag. N.H., 1879, ser. 5, vol.
iv., p. 179.

Length of the adult female rather more than $1\frac{1}{2}$ lines.

The profile of the upper part of the caput of this spider forms a strong curve, the occipital region being considerably convex; the lateral constrictions on the lower margins of the caput are but slight.

The colour of the cephalo-thorax is a bright, shining, yellow-brown, the legs (which are tolerably long, rather slender, and furnished with hairs and a few fine bristles) being a little lighter

in hue, while the falces, maxillæ, labium, and sternum are darker. The falces are long, powerful, vortical, and prominent near their base in front, being also armed with a row of five strongish teeth on the inner side of the extremity of each.

The eyes are in the ordinary position and seated on dark tubercles; they are rather small, and do not differ very greatly in size. Those of the hind-central pair are much nearer to each other than each is to the hind-lateral eye on its side, the interval between them being equal to a little more than an eye's diameter; those of the fore-central pair are almost contiguous to each other. The clypeus projects evenly forwards, and its height rather exceeds half that of the facial space. The palpi are tolerably long, similar in colour to the legs (the radial and digital joint having a deeper tinge), and devoid of any terminal claw.

The abdomen is of an oblong, somewhat cylindric-ovate form, rather broadest at its hinder extremity; its colour is black, and it is thinly clothed with hairs. The genital aperture is large, prominent, of characteristic form, and of a dark blackish and red-brown colour. A damaged example of the male appeared to show but little difference from the female in general characters and appearance. The falces, however, are less powerful, and the abdomen shorter and less cylindric in its form. The palpi have the cubital and radial joints short; the latter is considerably produced at its fore extremity on the upper side; the termination being obtusely pointed and directed slightly outwards; and on the outer margin of the joint is a rather dense tuft of strong black hairs. The digital joint is large, and of a short roundish-oval form; the palpal organs are prominent and complex; near their extremity, on the inner side, is a strong, tapering, sharp pointed black spine, which curves round in a nearly circular form underneath the fore extremity of the digital joint, and has its hair-like point in contact with the outer side of the palpal organs, at whose extremity there are also several other prominent corneous processes and spines. At the base of the palpal organs, on the outer side, is a strong, curved

process, somewhat obscured by the tuft of hairs on the outside of the radial joint.

Examples of this spider, which I believe to be hitherto undescribed, were contained in a collection made by Mr. H. C. Young, of Glasgow, near that city, and kindly sent to me for determination.

NERIENE HUTHWAITII.

NERIENE HUTHWAITII, *Cambr.*, Ann. and Mag. N.H., 3rd ser., vol. vii., p. 436, and *Blackw.*, l.c., p. 260, pl. xviii., fig. 176.

Length of the male 3-20ths of an inch.

Nearly allied to *Nerience affinis*, Bl. (p. 114), but differs in the shorter, and rather stronger, though similarly formed, palpi. The falces are longer, but want the strong tooth in front. The radial joint of the palpus is nearly or quite double the length of the cubital, whereas these two joints in *Nerience affinis* are equal. The general colouring also in the present spider is less bright.

Found at Calke Abbey, near Derby; also on Dartmoor, and on the Cheviot Hills, but exceedingly rare.

NERIENE AGRESTIS.

NERIENE AGRESTIS, *Blackw.*, l.c., p. 276 (exclude references to pl. xix., fig. 190, and pl. xxii., fig. D).

The length of the adult male is 1-10th of an inch.

Having very lately (July 6, 1880) received from Mr. F. M. Campbell, of Hoddesdon, an example of what I feel but little doubt is the true *Nerience agrestis*, Blackw., I have come to the conclusion that the spider described under that name (p. 115) belongs to the very closely allied species *Nerience fusca*, Blackw. These two spiders are so nearly allied that Mr. Blackwall himself (who had long before lost the types of the two species) some years ago repeatedly returned to me spiders of the species described at p. 115 under the names of both *fusca* and

agrestis. The figures given of these two species in his work (l.c. pls. xix. and xxii.) are all taken from examples of the spider described at p. 115). These were sent to him by myself, and are still in my collection.

The true *Nerienne agrestis*, Bl. (now recorded), differs from *Nerienne fusca*, Bl. (*Nerienne agrestis*, Bl., Cambr., p. 115), in being rather larger. The cephalo-thorax is of a darker, richer brown, and has not the perceptible convexity or slight gibbosity at the occiput which distinguishes the male of that species, and the legs are of a redder hue. The clypeus is also less in height, being less than half that of the facial space, while in *Nerienne fusca*, Bl. (*Nerienne agrestis*, Bl., Cambr.), it equals or slightly even exceeds half. The two last differential characters are very marked and reliable.

The palpi in both spiders are very similar; but the cusps of the apophysis at the fore-extremity on the upper side of the radial joint are rather stronger, and more widely separated in the present species; and on the inner side a little way from the inner one of the two cusps is a very minute prominent point not observable in *Nerienne fusca*; the extremity on the under side is also more distinctly produced, and the palpal organs differ a little in structure.

The example received from Mr. Campbell is the first I have ever seen of the species, though it would probably be found to be not rare in its locality. It does not appear to have been rare in North Wales at the time it was described by Mr. Blackwall, who also records it from Berwickshire.

NERIENE EXCISA.

NERIENE EXCISA, *Cambr.*, Trans. Linn. Soc. xxvii., p. 440, pl. lvi., No. 29.

Male, length 1-10th of an inch.

Cephalo-thorax dark brown, minutely punctuose; caput raised, or gibbous behind the eyes. The gibbous part is rather prominent in front, where it is clothed with short hairs, but it melts away,

without any strong line of demarcation, into the sides and hinder part of the caput.

Legs moderately long, pale yellowish.

Palpi similar in colour to the legs, moderate in length and strength; the radial joint is shorter than the cubital, and has its fore-extremity, on the upper side, produced into a rather long, tapering, sharp-pointed apophysis, whose extremity is slightly curved outwards and upwards. Digital joint of moderate size, palpal organs complex, with two or more black spines at their extremity.

Abdomen short, broad-oval, and of a sooty-black colour.

Found near Paisley, and also in Northumberland and Berwickshire. Allied to *Nerience apicata*, Bl. (p. 115), *Nerience retusa*, Westr. (p. 116), *Nerience gibbosa*, Bl. (p. 117), and *Nerience tuberosa*, Bl. (p. 117), but easily distinguished by the form of the occipital gibbosity, as well as by the structure of the palpi.

NERIENE DOUGLASII.

NERIENE DOUGLASII, *Cambr., Ann. and Mag. N.H.*, 4th ser., vol. 16, p. 247, pl. viii., fig. 5.

Length of an immature female $1\frac{1}{2}$ line.

Cephalo-thorax yellow; occiput, and converging lines on the sides, dusky black; lateral margins of thorax black.

Legs long, 1.4.2.3., pale yellow, armed with numerous coarse hairs, and a very few longish, slender, spine-like bristles.

The eyes of the posterior row are divided by equal intervals of an eye's diameter.

Abdomen dull greenish-black above and on the sides, with a darker, coarse, longitudinal stripe on the fore-part, and a series of tolerably distinct pale yellowish, obliquely opposed spots or patches in pairs along the middle of the upper side towards the spinners. The first pair are the largest, and of an oval form; the next more elongate, the rest are simply transverse angular bars. Under side dull pale yellowish, with a broad, longitudinal,

black band enclosing the spinners and reaching to the anterior extremity.

Found near Castlo Douglas, Kirkcudbrightshire, and also near Glasgow.

It is possible that *Nerience Douglasii* may be only a young example of *Linyphia* (*Nerience*, Bl.) *abnormis* Bl., which is, at any rate, a very closely allied species, and has, as I have lately ascertained, a very similar abdominal pattern; but as there appear to be some points of difference between the two spiders, I hesitate to pronounce them identical, until the discovery of adults of *Nerience Douglasii* in the locality where the type was found, sets the matter at rest.

NERIENE LAPIDICOLA.

NERIENE LAPIDICOLA, *Thor.*, Syn. Eur. Spid., p. 443.

„ RUFIPES, *Blackw.*, l.c., p. 251.

Length of the female 3-20ths of an inch. Male rather smaller.

Cephalo-thorax light red-brown. Legs 4.1.2.3., furnished with hairs and a few spines, and similar in colour to the cephalo-thorax. Humeral joint of the male palpus enlarged at its extremity; cubital and radial joints short; the former is the strongest, and has a few long bristles at its fore-extremity, the latter has an obtuse process on the under side of the upper part. Digital joint oval, with a small protuberance at its base on the inner side. Palpal organs prominent and complex with spine-like processes.

Abdomen brownish-black.

Found on railings and under stones at Crumpsall, in Lancashire. [I have never seen this spider, but it appears to be allied to *Nerience livida*, Bl. (p. 122) and *Nerience viaria*, Bl. (p. 127)].

NERIENE INCISA.

NERIENE INCISA, *Cambr.*, Trans. Linn. Soc. xxvii., p. 447, pl. lvii., No. 34.

Female, length 1-7th of an inch.

Cephalo-thorax small, with a *strong notch or depression* on the upper side at the junction of the caput and thorax, very conspicuous when looked at in profile; colour, orange-yellow. Legs similar in colour, moderate in length and strength, and furnished with numerous long fine hairs. Abdomen large, glossy, and dull black.

Found under a stone near Llanrwst, North Wales, in the month of April, 1860; and since then received from near Paris.

NERIENE MYSTICA.

NERIENE MYSTICA, *Cambr, Ann. and Mag., Nat. Hist.* 1879, vol. iv., ser. 5, p. 201, pl. xii., fig. 5.

Adult female, length 1 line.

The cephalo-thorax is of an elongate-oval form, somewhat drawn out at the fore-extremity; the clypeus projects, and is equal in height to half that of the facial space. It is of a dull greenish yellow-brown colour; the margins and some vein-like converging lines blackish, and the fore part suffused slightly with a sooty hue. The hinder slope has a very large deepish extended indentation, giving it a hollow appearance in profile, with a prominence at the thoracic junction, and a correspondingly deep depression directly behind the occiput, which is a very little gibbous; the ocular area slopes forwards, and the clypeus projects in a slightly upturned form; the whole profile line is thus characteristically, but unusually irregular. Behind each lateral pair of eyes is a slight, longitudinal, indentation running backwards. The ocular area is of a broadish transverse oval shape, and the eyes are rather closely grouped together, those of the hind-central pair, which are the largest, are further from each other than each is from the lateral on its side, the interval being about equal to an eye's diameter. The interval between the fore-centrals is very small, and each is contiguous to the fore-lateral next to it; the lateral pairs are placed very slightly obliquely. The legs are slender, rather short, of a pale

orange-yellow colour, furnished with hairs, and (chiefly on the tibial joints) with a few erect slender bristles.

The falces are small, straight, slightly inclined backwards, and (with the maxillæ, labium, and sternum) similar in colour to the cephalo-thorax.

The abdomen is large, tolerably convex above, of a somewhat oblong-oval form, and projects, though not greatly, over the base of the thorax; it is of a dull black hue tinged with olive, glossy, and very sparingly clothed with hairs. A very broad, strong, prominent process is connected with the genital aperture; the extremity being of a somewhat re-curved form.

A single example of this spider was received about the middle of June, 1879, from the late Colonel Pickard, R.A., V.C., by whom it was found at Balmoral Castle, Scotland. The very peculiar and irregular profile line of the cephalo-thorax, the projecting clypeus, and prominent genital process will serve to distinguish this species from all its congeners known to me.

NERIENE SUBLIMIS.

NERIENE SUBLIMIS, *Cambr.*, Proc. Berwickshire, N.H. Club vii., p. 314.

Length of the male 1-10th of an inch; female larger, being nearly 2 lines in length; of slender form, and allied to *Nerience fuscipalpis*, C. L. Koch (p. 129), but readily distinguished by its larger size, redder-brown legs, slenderer falces, and the structure of the palpal organs.

Cephalo-thorax deep brown.

Legs long, 4.1.2.3., slender, yellow-brown, the femora strongly tinged with red.

Palpi of the male short, radial joint strongest, with its outer extremity produced into a short, slight point, and a slightly angular point at the extremity in front, rather towards the inner side. Cubital joint rather nodiform, with a longish, slightly sinuous bristle directed forwards from its anterior side. Digital joint of tolerable size, and somewhat angularly prominent

towards its base on the outer side. Palpal organs prominent and complex, but less compact and more prominent than in *Nerience fuscipalpis*. A strong process projects prominently backwards and inwards, its extremity slightly curved, and terminating in an obtuse, or squarish point; another, lying along the outer side, has its fore extremity bifid or forked.

Abdomen of the male small, glossy, and black.

Found on the top of the Cheviot Hills.

NERIENE DECORA.

NERIENE DECORA, *Cambr.*, Trans. Linn. Soc., xxvii., p. 438.

Length of the male 1 line.

Closely allied to *Nerience subtilis*, *Cambr.*, and *Nerience innotabilis*, *Ibid.* (p. 131), resembling them very nearly in general structure and appearance, but easily distinguished by its uniform reddish yellow-brown cephalo-thorax and legs, and by the conical enlargement on the outer side of the digital joint of the palpus being far less prominent. This joint has also at its base a pointed prominence, the point of which is almost in contact with the inner extremity of the radial joint. The cubital joint has a single fine straight shortish bristle in front. The eyes of the posterior row are equi-distant from each other. Abdomen glossy black-brown.

Found at the roots of grass and low plants at Formby Hall, near Liverpool, on the 12th of July, 1859.

NERIENE CLARA.

NERIENE CLARA, *Cambr.*, Trans. Linn. Soc. xxviii., p. 544., pl. xli., fig. 14.

Length of the female $1\frac{3}{4}$ line.

General form and structure of ordinary type.

Cephalo-thorax deep, rich shining black chesnut-brown, and its surface somewhat rugulose or striated.

Legs bright reddish-orange, genual joints rather paler; tibiæ of the first pair rather incrassated.

Palpi similar in colour to the legs, the humeral joint being paler.

Falces reddish-brown, a little divergent at their extremities.

Sternum similar in colour to the cephalo-thorax.

Abdomen black tinged with olive.

This spider is somewhat similar in colours and appearance to the female of *Walckenaëra cuspidata*, Bl. (p. 146) and *W. unicornis*, Cambr. (147), but at present I think it is distinct from both.

Found on the Cheviot Hills, and in the Orkneys.

NERIENE PUDENS.

NERIENE PUDENS, *Cambr.*, Trans. Linn. Soc. xxviii., p. 544, pl. xlv., fig. 15.

Length of the female $1\frac{3}{4}$ lines.

Very similar in general form and structure to *Nerieno clara* Cambr.

Cephalo-thorax dark reddish-brown. Legs and palpi yellow-brown, tinged with orange; the former less strong than those of *Neriene clara*, and the fore tibiæ are not incrassated. Abdomen dull black tinged with olive. Eyes rather large, laterals of anterior row largest. Easily distinguished from *Neriene clara* by a striking difference in the form of the genital aperture.

Found on the Cheviot Hills.

NERIENE PAVITANS.

NERIENE PAVITANS, *Cambr.*, Trans. Linn. Soc., p. 543, pl. xlv., fig. 13.

Length of the female $1\frac{1}{2}$ lines.

Nearly allied, and very similar, to *Neriene clara*, Cambr., and *Neriene pudens*, Cambr., but rather less brightly coloured than the former, without any striation or regulosity of the surface of the cephalo-thorax; and the height of the clypeus is also less, being

only just half that of the facial space. Legs 4.1.2.3. The tibiae of the first pair are rather incrassated (like those of *Nerience clara*). The eyes are smaller than those of *Nerience pudens*. Form of the genital aperture very distinct.

Found on the Cheviot Hills.

NERIENE MORULA.

NERIENE MORULA, *Camb.*, Trans. Linn. Soc. p. 545, pl. xlv., fig. 16.

Length of the male 1 line, female rather larger.

General form and structure of ordinary type.

Cephalo-thorax deep yellow-brown; legs and palpi dull orange; abdomen blackish; palpi of the male shorter. Radial joint much stronger than the cubital, with some longish bristly hairs towards the outer side in front, and produced at the fore extremity of the upper side into a tapering, pointed, very slightly curved apophysis nearly equal to the joint in length, and its point directed inwards. Digital joint of moderate size, palpal organs prominent and complex. Eyes of the hind-central pair further from each other, than each is from the lateral, of the same row next to it.

Easily distinguished from many other small, very similar, and allied species by the form of the radial joint of the palpus.

Found on the Cheviot Hills.

NERIENE FURVA.

NERIENE FURVA, *Blackw.*, l.c., p. 253.

Length of the male 1-9th of an inch.

Apparently of ordinary general form. Cephalo-thorax dark-brown, slightly tinged with red, and darkest on the caput.

Legs robust, of a red tint.

Falces strong, and convex in front.

Palpi similar in colour to the legs. Cubital and radial joints short; the former strongest, the latter has two apophyses at its

extremity, one in front, terminating in a point and with a small acute process on the inner side ; the other underneath, with a pointed process on the outer side. Palpal organs prominent and complex, with a corneous process at their upper part, curved outwards.

Abdomen brownish-black.

Found under a piece of rock in a wood, North Wales, in June. [I have not seen this spider.]

NERIENE PULLA.

NERIENE PULLA, *Blackw.*, l.c., p. 256.

Length of the male 1-11th of an inch.

Of ordinary general form and appearance.

Cephalo-thorax dark brown. Legs reddish-brown. Palpi red-brown ; cubital and radial joints short ; the latter has on its outer side, a large process rounded at the extremity, and a small one on its inner side. Palpal organs prominent and complex. Abdomen, yellowish-brown, with numerous minute spots and fine streaks of a deeper shade.

Found on railings in the month of June, in North Wales. [I have not seen this spider.]

NERIENE LUGUBRIS.

NERIENE LUGUBRIS, *Blackw.*, l.c., p. 261.

Length of the male 1-12th of an inch.

Cephalo-thorax brownish-black. Caput rather prominent, and depressed on the sides. Legs red-brown. Palpi brown-black. Cubital and radial joints short ; the latter much the strongest, with an obtuse apophysis at its extremity underneath, and a larger one in front, curved outwards and somewhat pointed at its extremity ; the digital joint has a bold protuberance near its base on the outer side ; palpal organs prominent and complex. Abdomen black.

Found on railings in June, near Manchester. [I have not seen this spider.]

NERIENE AVIDA.

NERIENE AVIDA, *Blackw.*, l.c., p. 263.

Length of the female 1-12th of an inch; male rather smaller
Sexes similar in colour.

The cephalo-thorax of the male has the forepart somewhat gibbous, and a small indentation behind each lateral pair of eyes. Colour brown. Legs tinged with red. Radial joint of palpus larger than the cubital, with a pointed apophysis at its extremity in front. Digital joint somewhat oval; its base slender and curved outwards, and there is a lobe near the middle of its outer side. Palpal organs prominent and complex, with a bold projection near their base on the inner side, and a long, black, convoluted, filiform spine, enveloped in membrane, extending from their upper part beyond the extremity. Abdomen brownish-black.

Both sexes found on railings in April, North Wales. [I have not seen this apparently very distinct spider.]

NERIENE TIMIDA.

NERIENE TIMIDA, *Blackw.*, l.c., p. 263.

Length of the female 1-12th of an inch. Male rather smaller.
Sexes similar in colour.

Cephalo-thorax dark-brown. Legs pale reddish-brown.
Abdomen black.

Palpi of the male short; radial joint much stronger than the cubital; digital joint oval; palpal organs complex, with a short, prominent spine, enveloped in membrane at their extremity.

Found on railings, in the month of April, in North Wales.
[I have not seen this spider.]

NERIENE MINIMA.

ARGUS MINIMUS, *Walck.*, Ins. Apt. iv., p. 512.

NERIENE PARVA, *Blackw.*, l.c., p. 265.

Length of the male 1-20th of an inch.

Cephalo-thorax brown, and of normal form; compressed before, rounded on the sides. Legs similar in colour. Palpi also brown; radial joint produced in front, very prominent, and pointed, with a large process near its base on the inner side; digital joint oval; palpal organs prominent and complex, with a prominent process on their outer side, and one or two small pointed ones at their extremity. Falces darker coloured than the cephalo-thorax, with a tooth-like process in front near the extremity.

Abdomen dark-brown.

Found on railings, in the month of January, in North Wales.

[I have not seen this minute spider, which appears to be a very distinct one.]

NERIENE SULCATA.

NERIENE SULCATA, *Blackw.*, l.c., p. 284.

Length of the male 1-12th of an inch.

Cephalo-thorax brown-black, with a small longitudinal indentation immediately behind each lateral pair of eyes. Legs red, tinged with brown. Palpi similar to the legs in colour. Cubital and radial joints short; the latter strongest, with a somewhat pointed apophysis at its extremity in front; digital joint irregular oval, with a lobe near the middle of the outer side. Palpal organs prominent and complex, with a long, black, filiform spine, enveloped in delicate membrane, and extending from the upper part beyond their extremity.

Abdomen brownish-black.

Found on the doorsteps and gravel walk, in the months of June and July, near Llanrwst, North Wales. [I have not seen this spider.

NERIENE DUBIA.

NERIENE DUBIA, *Blackw.*, l.c., p. 288.

Length of the male 1-12th of an inch.

General form and structure normal.

Cephalo-thorax red-brown; legs moderately long, armed with a few fine spines, and of a pale red-brown colour; palpi of a similar hue; cubital and radial joints short, the latter considerably produced on the outer side; digital joint oval; palpal organs complex, with a prominent, slightly curved, pointed spine near the middle, and two slender ones, enveloped in delicate membrane, at their extremity.

Abdomen brownish black.

Found on railings near Manchester in the month of October, and in Monmouthshire in summer time. [I have not seen this spider.]

NERIENE MONTANA¹

NERIENE MONTANA, *Blackw.*, l.c., p. 273.

Length of the male, 1-10th of an inch.

Of ordinary form and general structure.

Cephalo-thorax pale yellow-brown. Legs brownish-red, armed with a few fine spines. Palpi similar in colour; cubital and radial joints short; the latter strongest and somewhat produced at its extremity in front; digital joint oval, with a small conical process at its base, and a lobe near the middle of the outer side. Palpal organs complex, with a prominent, curved, scale-like process at their base on the outer side. Abdomen dark, yellowish-brown.

Found at Ingleborough, Yorkshire, in the month of September. [I have not seen this spider.]

NERIENE PILOSA.

NERIENE PILOSA, *Blackw.*, l.c., p. 283, pl. xix., fig. 196.

Length of the female $\frac{1}{3}$ th of an inch.

Apparently of ordinary general form and appearance.

Cephalo-thorax oval, pale-brown, with a fine, black, marginal line. Legs brown, with a few very fine spines.

Abdomen pale yellowish-brown above, thickly covered with fine black hairs, and of a blackish hue underneath.

Found at Cranmore, Ireland. [I have never seen this spider, which appears to be a somewhat doubtful species.]

NERIENE PALLIDULA.

NERIENE PALLIDULA, *Blackw.*, l.c., p. 283, pl. xix., fig. 197.

Length of the female 1-10th of an inch.

Cephalo-thorax roundish, slightly compressed before, and of a pale yellowish-brown colour, with converging deep brown lines on the sides, and a fine black marginal line. Legs, 1.2.4.3., hairy, spiny, and of a pale yellow colour. Abdomen ovate, yellowish-grey above, darker on the sides and behind, and blackish underneath. In the middle is a dark, dagger-shaped marking, followed, behind, with three double, dark, longitudinal lines, which converge at the spinners. These lines are occasionally obsolete.

Not uncommon at Cranmore, Ireland. [I have not seen this spider, whose genus appears to be doubtful; perhaps it may be a *Theridion*.]

NERIENE CARINATA.

NERIENE CARINATA, *Blackw.*, l.c., p. 284, pl. xix., fig. 198.

Length of the female 1-8th of an inch.

Cephalo-thorax brown, edged with black, and with black converging lines on the sides; its form is nearly round, with an elevated ridge in the medial line, and the sides depressed until almost horizontal. Abdomen ovate, greyish-black above, marked with numerous waved, silvery lines; under-side jet black. Legs brown, 1.4.2.3., moderately long, furnished with hairs and very fine spines.

Found in the Grove at Cranmore, Ireland. [I have not seen this spider. Like the last its genus appears rather doubtful.]

GENUS WALCKENAERA, *Blackw.*

WALCKENAERA MINUTISSIMA.

WALCKENAERA MINUTISSIMA, *Cambr.*, Ann. and Mag. Nat. Hist., ser. 5, vol. iv. p. 203, pl. 12.

Adult female length $\frac{1}{2}$ a line (1-24th of an inch).

The cephalo-thorax, legs, palpi, falcæ, maxillæ, labium, and sternum of this exceedingly minute spider are of a not very dark brown colour, slightly tinged with reddish, the genual joints of the legs being much paler than the rest. The abdomen is large, of a globular form, and projects greatly over the thorax, its colour being of a dull, olive green, strongly suffused with a sooty hue, and its surface thinly clothed with short hairs.

In its general form this little spider is very like *Walckenaëra brevipes*, Westr. (p. 142); resembling it in the short, broad cephalo-thorax, short legs, and round abdomen. It is, however, a smaller spider, and of a paler hue, and, although the eyes are in a very similar general position, they are larger and more closely grouped together. The interval, however, between those of the central pair of the hinder row is greater, being double that which separates each of them from the lateral eye on its side; whereas in *Walckenaëra brevipes* the eyes of the hinder row are separated by equal intervals. In the present spider the position of the eyes approaches very nearly to that of *Pholcomma gibbum*, Westr. (p. 82). The height of the clypeus, also, in *Walckenaëra minutissima* is greater than that of *Walckenaëra brevipes*, being very nearly equal to two-thirds of the height of the ocular area, while in *Walckenaëra brevipes* it is only a little more than one-half of the height of that area. In the male (when discovered) the height of the clypeus will probably be found to exceed two-thirds of that of the ocular area.

The legs are slender, short, and furnished with hairs, one or two being erect.

From *Walckenaëra brevis*, Wid. (p. 142), the present spider may be distinguished not only by the same characters in respect to the eyes, which distinguish it from *Walckenaëra brevipes*, but by its much smaller size, paler colour, and the still greater proportionate height of clypeus, which in *Walckenaëra brevis* is no more than half that of the ocular area.

Two adult females were received from my cousin, the late Colonel Pickard, R.A., by whom they were found at Balmoral Castle, Scotland, about the middle of June, 1879.

GENUS WALCKENAERA, *Blackw.*

WALCKENAERA SUBÆQUALIS.

ERIGONE SUBÆQUALIS, *Westr.*, Aran. Suoc., p. 251.

WALCKENAERA FORTUITA, *Cambr.*, Trans. Linn. Soc. xxvii., p. 452, pl. lvii., No. 37.

Length of the male 1-16th of an inch. Female somewhat larger.

Cephalo-thorax, legs, and palpi dark-brown, tinged with yellowish. The caput is rounded above, slightly elevated, and has a narrow, longitudinal indentation behind each lateral pair of eyes. Legs rather short and slender, 1.4.2.3., but there is not much difference in their actual length. Palpi short. Radial joint stronger than the cubital, enlarged all round at its extremity, chiefly before and behind; the margin is uneven, but presents no very marked prominences or projections. Digital joint rather small, with a strongish lobe on the outer side, and slightly protuberant near the base on the inner side; palpal organs rather complex, with a very slender filiform spine enveloped in membrane connected with their surface. Abdomen of a blackish colour. The sexes resemble each other in colour.

Found among grass and other herbage in June, 1869, near the Basingstoke Railway Station.

WALCKENAERA PRATENSIS.

WALCKENAERA PRATENSIS, *Blackw.*, l.c., p. 306, pl. xxi., fig. 222.

Length of the female $\frac{1}{4}$ th of an inch. Male rather smaller.

Cephalo-thorax dark reddish-brown; upper part of the caput of the male slightly raised, with a transverse groove just in front of the hind-central pair of eyes, joining in with a deep longitudinal indentation behind each lateral pair; height of the clypeus, which is rather full and prominent, equal to half that of facial space.

Eyes small. Those of the hind-central pair rather more than a diameter apart, and each is removed from the hind-lateral eye on its side by an interval equal to that which separates each fore-central eye from the fore-lateral on its side. There is a distinct, but slight interval between the eyes of each of the lateral, and fore-central pairs respectively.

Legs moderately long, rather slender, and of a reddish orange colour.

Palpi similar in colour to the legs; radial joint much stronger than the cubital, being considerably expanded all round at its fore extremity, and furnished with numerous coarse hairs. Digital joint large, dark brown; palpal organs complex, with a strong black spine curved in a circular form at their extremity, rather on the outer side, and forming a large, conspicuous coil, within the curvature of which is a prominent, slightly curved, pointed spine.

Abdomen rather large, glossy black.

The sexes are similar in colours.

Found among grass in meadows on the banks of the Conway, near Llanrwst, in the month of April, 1860.

WALCKENAERA MEADII.

WALCKENAERA MEADII, *Cambr.*, Trans. Linn. Soc. xxvii., p. 450, pl. lvii., No. 36.

Length of the male $1\frac{1}{2}$ lines.

Cephalo-thorax glossy black-brown; upper part of the caput

round, and slightly elevated, with a longish, narrow, longitudinal indentation running backwards from each hind-lateral eye; the height of the clypeus exceeds half that of the facial space.

Eyes very similarly placed to those of *Walckenaëra pratensis*, Blackw.

Legs moderately long, 4.1.2.3., strong, bright orange-yellow.

Palpi rather short; cubital joint rather longest at its fore-extremity, which is a little produced in front; radial joint very short, but strong, and expands on all sides, mostly in front and rather on the outer side, where there is a tuft of bristly hairs; digital joint short; palpal organs prominent, but not very complex, with a strong, black, circularly-curved spine at their outer extremity, and from within its curvature, a strongish, yellow-red-brown, black tipped, sharp, corneous process projects downwards.

Abdomen glossy black, rather large, of a flattened-convex form on the upper side, the centre of which is occupied by four round, impressed, red-brown spots, in a square, whose fore-side is the shortest.

Closely allied to *Walckenaëra pratensis*, Blackw., but among other slight differences the eyes of the hind-central pair are nearer together, forming a line scarcely longer than that described by the fore-central pair, and the clypeus is proportionately higher.

Found in Wicken Fen, Cambridgeshire.

WALCKENAERA INCURVATA.

WALCKENAERA INCURVATA, *Cambr.*, Trans. Linn. Soc. xxviii., p. 551, pl. xlvi., fig. 20.

Length of the male scarcely 4-5ths of a line.

Cephalo-thorax short, broad, greenish yellow-brown, with darker, dusky, converging lines on the sides; the upper part of the caput is very slightly raised; occiput full and rounded.

Eyes of the hind-central pair on the summit of the caput, oval, oblique, and separated by scarcely a diameter's interval; height of the clypeus equal to half that of the facial space.

Legs pale yellow; femora tinged with reddish-brown.

Palpi similar to the legs in colour; moderately long, and rather slender; radial joint rather stronger than the cubital, with its fore-extremity on the upper side produced into a somewhat tapering apophysis, whose pointed extremity is sharply recurved or crooked downwards; digital joint moderate in size; palpal organs encircled across the middle by a long, slender, tapering, filiform black spine, which forms a bold curve below them, and passes from the midway somewhat sinuously along the inner side, terminating in a hair-like point beneath the extremity of the digital joint.

Abdomen black, glossy, and covered, with minute punctures.

A very distinct and remarkable species, found near Aberdeen.

WALCKENAERA HARDII.

WALCKENAERA HARDII, *Blackw.*, l.c., p. 292, pl. xx., fig. 206.

Length of the male 1-6th of an inch.

Cephalo-thorax red-brown, rather prominent in front, with an obtuse conical protuberance within the ocular area, and a little in front of the hind-central eyes; immediately behind the protuberance is a small tuft of hairs.

The legs are similar to the cephalo-thorax in colour.

Palpi red-brown; radial and digital joints much the darkest; cubital and radial joints clavate; the latter is the strongest, and has a slightly tapering, obtusely pointed apophysis in front, and a smaller one on the inner side. Palpal organs complex, with a small curved spine enveloped in membrane at their extremity.

Abdomen brownish-black.

Found in Berwickshire, but very rare. Easily distinguished by its large size from some other species, which also have a protuberance within the ocular area.

WALCKENAERA SORDIDATA.

ERIGONE SORDIDATA, *Thorell*, Syn. Eur. Spid., p. 452.

WALCKENAERA ATRA, *Blackw.*, l.c., p. 300, pl. xxi., fig. 215.

Length of the female 1-14th of an inch. Male rather smaller.

Cephalo-thorax black; caput of the male, prominent but obtuse, with an oblong indentation on each side extending backwards from each lateral pair of eyes.

Legs and palpi brown. Cubital and radial joints of the male palpus short; radial much the strongest; digital joint oval; palpal organs highly developed, complex, with a long, black, very prominent, curved filiform spine enveloped in membrane, originating about the middle of the outer side, and a short, straight, pointed one at their extremity.

Abdomen black.

Found under stones, North Wales, in May. [I have not seen this spider.]

WALCKENAERA PARVA.

WALCKENAERA PARVA, *Blackw.*, l.c., p. 304, pl. xxi., fig. 219.

Length of the male about 1-18th of an inch; female 1-16th.

Cephalo-thorax brown. Caput of the male very convex behind the eyes, and with a longitudinal indentation immediately behind each lateral pair. Legs brown; palpi similar in colour; radial joint rather shorter and stronger than the cubital, and with an acute prominent apophysis at its extremity in front. Palpal organs not complex, but somewhat prominent.

Abdomen dark brown-black.

Found in numbers on railings, North Wales, in the months of December and January. [I have not seen this spider.]

WALCKENAERA TURGIDA.

WALCKENAERA TURGIDA, *Blackw.*, l.c., p. 299, pl. xx., fig. 214.

Length of the female 1-13th of an inch. Male rather smaller.

Cephalo-thorax dark-brown. Caput of the male has a strong prominence deeply indented on the sides.

Eyes seated on the prominence, and before each hind-central eye is a large obtuse protuberance.

Legs and palpi reddish-brown. Radial joint rather larger than the cubital; the former has a strong bifid apophysis in front; its inner process being longer and more pointed than the outer one; digital joint oval; palpal organs prominent and complex, with a fine curved spine at their extremity.

Abdomen brown, obscurely mottled with a deeper hue.

Found under stones and blocks of wood in plantations near Manchester in autumn. [I have not seen this spider.]

WALCKENAERA BICOLOR.

WALCKENAERA BICOLOR, *Blackw.*, l.c., p. 303.

Length of the male 1-16th of an inch.

Cephalo-thorax brown, prominent but obtuse before, with an indentation immediately behind each lateral pair of eyes.

Legs moderately strong, brown.

Palpi similar to the legs in colour; cubital and radial joints short, the latter much the strongest. Digital joint oval, with a projection on the outer side. Palpal organs complex, with a slender process at their base directed upwards, a bold protuberance on the inner side, and a fine convoluted filiform spine enveloped in membrane, and extending from their upper part to the extremity.

Abdomen brownish-black.

Found on railings, North Wales, and under a stone near Edinburgh, in July.

WALCKENAERA EXILIS.

WALCKENAERA EXILIS, *Blackw.*, l.c., p. 305, pl. xxi. fig. 220.

Length of the female, 1-20th of an inch.

Cephalo-thorax dark brown, prominent before, with a narrow, longitudinal indentation behind each lateral pair of eyes. The

four central eyes form a narrow oblong trapezoid whose anterior side is shortest.

Legs pale brown, moderately long.

Palpi like the legs in colour; radial and digital joints dark brown; radial stronger than the cubital, with two pointed apophyses at its extremity in front. Palpal organs very prominent and complex, with a short, curved, black, projecting spine at their extremity.

Abdomen small, yellowish-brown, with obscure marks of a deeper shade.

Found among moss at the root of a tree, North Wales, in the month of October. [I have not seen this spider.]

WALCKENAERA VAFRA.

WALCKENAERA VAFRA, *Blackw.*, l.c., p. 308.

Length of the male 1-10th of an inch.

Cephalo-thorax brownish-red, with a strong, vertical prominence in front; the prominence is somewhat compressed on the sides, surmounted with a few hairs, and of a dark brown colour, tinged with red. Two eyes are seated on summit of the prominence and six (in three pairs) at its base in front.

Legs long, slender, bright yellowish-red.

Palpi similar to the legs in colour; radial and digital joints brown; cubital joint clavate; the radial has two apophyses at its extremity, one on the inner side, large, pointed, and curved outwards in front of the digital joint; the other, large and obtuse, on the outer side. Digital joint somewhat oval. Palpal organs turned outwards, complex, with two long contiguous black spines enveloped in membrane originating near the middle, and curved in a circular form on outer side. A shorter spine also originates near the middle, and curves obliquely downwards.

Abdomen brownish-black.

Found under stones in North Wales in the month of October. [I have not seen this very distinct spider.]

WALCKENAERA CIRRIFRONS.

WALCKENAERA CIRRIFRONS, *Cambr.*, Trans. Linn. Soc. xxvii., p. 458, pl. 57, No. 43.

Length of the male 1-16th of an inch.

Cephalo-thorax of a rich dark brown hue, broad and obtuse in front. Caput has a slight but distinct eminence in the occipital region. The eminence is paler than the rest, and a little gibbous on each side of its summit at the fore part, each gibbosity being furnished with a thin tuft of strongish bristly black hairs directed forwards and outwards, and there is a deep longitudinal indentation behind each lateral pair of eyes. The hind-central eyes are in front of the top of the eminence.

Legs yellow, femora and tibiæ tinged with reddish-orange.

Palpi yellow, cubital joint longer than the radial, curved and slightly clavato; radial joint enlarged at its extremity, produced in front, mostly towards the inner side, into a subangular point with an irregular margin, forming two or three short points. Digital joint small, short oval, yellow-brown; palpal organs rather complex, with two short, rather strong, black spines at their extremity, one of which is slightly tortuous or corkscrew shaped.

Abdomen short-oval, black. Allied to *Walckenaera scabricula*, Westr. (p. 156).

Found at the roots of grasses on a sandy bank near Southport, Lancashire, in the month of June, 1859.

WALCKENAERA THORELLII.

ERIGONE THORELLII, *Westr.*, Araneæ Suec. p. 228.

WALCKENAERA FASTIGATA, *Blackw.*, l.c., p. 314, pl. xxii., fig. 229.

Length of the male 1-12th of an inch.

Cephalo-thorax dark brown, fore part very prominent and considerably elevated, with a large longitudinal indentation on each side, and divided into two lobes by a deep transverse groove or cleft in front. The elevated part is directed forwards, somewhat

rounded in front, depressed along the middle, and furnished with short hairs. The eyes of the hind-central pair are seated on the summit, and divided only by a diameter's interval. The rest are on the lower lobe, the fore part of which is clothed with hairs.

Legs rather long, slender, yellowish red.

Palpi similar to the legs in colour. Cubital joint strong, clavate; radial joint much smaller, produced and pointed at its extremity in front. Digital joint of moderate size, round-oval, dark yellow-brown. Palpal organs prominent and rather complex. Abdomen brownish-black.

Found among moss near Southport, Lancashire, in the month of June. Also received from Nuremberg, Bavaria, as well as from near Paris. A very striking and distinct species.

WALCKENAERA NODOSA.

WALCKENAERA NODOSA, *Cambr.*, Trans. Linn. Soc. xxviii., p. 550,
pl. xlv., fig. 21.

Length of the male $1\frac{1}{4}$ line.

Cephalo-thorax pale yellowish-brown. Legs and palpi pale yellowish. Abdomen dull blackish; probably these colours would be deeper and richer in older examples, the one described from having evidently not long effected its final moult.

The fore part of the caput is elevated into a roundish, not very large, knob-like eminence, well defined, and divided on the sides and hinder part, from the rest of the caput, by a deep groove or indentation. Near the middle of the summit of this eminence are the two hind-central eyes, and not far below them are the rest, in three pairs, in a transverse line. The legs are moderate in length and strength (4.1.3.2.). Palpi rather long; cubital joint long and somewhat clavate; radial very short, and expanding into three apophyses; one rather on the inner side, in front, is longest and strongest, tapering to a blunt point and terminating with a sharp, slightly curved spine, directed outwards; on the outer margin of this apophysis, near the base, is a small black,

sharp tooth-like prominence. Digital joint of moderate size, and a little irregular in form. Palpal organs not very complex, with a strongish, coiled, sharp-pointed, black spine on the outer side of their fore extremity.

A single example of this spider was found in Cold-martin moss near Wooler, Northumberland, in autumn, by Mr. James Hardy. It is nearly allied to *Walckenaera jucundissima*, Cambr., p. 449, pl. vi., fig. 8, but may be distinguished by the differential characters given, p. 451, pl. vi. fig. 8. f.

WALCKENAERA FURCILLATA.

PHALOPS FURCILLATUS, Menge, Preuss. Spinn., p. 220, pl. 43, tab. 120.

WALCKENAERA FURCILLATA, Cambr., Linn. Trans. xxviii., p. 548, pl. xlvi., fig. 18.

Length of the female 1·9th of an inch.

Cephalo-thorax bright reddish-yellow brown; from the occiput there rises a long, dark yellowish-brown cephalic process, bending sharply forwards from near its base, running pretty close to, and parallel with, the cephalo-thorax, and reaching to the fore extremity of the caput, where it expands in a strong bifid or forked form. The two hind-central eyes are placed on a slight enlargement, towards the hinder part of this process, on the upper side of the bend. The fore extremity of the caput is very slightly raised, prominent, and clothed with hairs directed upwards and backwards. In front of it are the eyes of the fore-central pair, and on each side, further back, is one of the lateral pairs.

Legs moderately long, slender, of an orange-yellow colour; the femora and tibiae tinged with red. Palpi short, yellow-brown; radial and digital joints darkest; radial very strong, expanding all round and produced at its extremity, on the inner side in front, into a moderately long, tapering, slightly curved, pointed apophysis, with its point directed outwards; and on the outer side into a short obtuse one, whose point is directed to the

point of the other apophysis. Digital joint of moderate size; palpal organs prominent, complex, with a duplex black spine, curved in a circular form, beneath the outer side of their extremity.

Abdomen black, tinged with olive brown.

This is one of the most remarkable of the genus in the form of the cephalic eminence. It was found among heather at Wokingham, by the Rev. C. W. Penny, in May, 1872. It has also been found in Prussia, France, and Bavaria, but is exceedingly rare.

GENUS TAPINOPA, *Westr.*

TAPINOPA FINITIMA,

LINYPHIA FINITIMA, *Cambr.*, Trans. Linn. Soc. xxvii, p. 426.

Length of the male 1-10th of an inch.

Very nearly allied to *Tapinopa longidens*, Wid., to which it also bears considerable resemblance, but is much smaller, and all the characteristic points are very much less strongly developed; for instance, the prominence at the base of the digital joint is short and of a somewhat conical form. The falcies are also smaller, and its teeth shorter than in *T. longidens*. The eyes are on black spots, in two closely approximated rows; those of the hind-central pair are further from each other than each is from the lateral eye of the same row on its side; and the height of the clypeus is only equal to the diameter of a fore-central eye. The cephalo-thorax is yellow, with a black marginal line, and a blackish angular marking at the occiput. The abdomen is whitish, with a few black markings.

Found in the neighbourhood of London.

TAPINOPA UNICOLOR.

TAPINOPA UNICOLOR, *Cambr.*, Proc. Berwicks. N. II. Club, vii., p. 317.

Length of the female nearly $2\frac{1}{2}$ lines.

This spider is also nearly allied to *Tapinopa longidens*, and resembles it in general form and structure, but is almost totally

destitute of pattern on the cephalo-thorax and abdomen, which, with the legs, are of a uniform yellowish hue. The eyes also of the fore-central pair are longer and nearer together, being distinctly the largest of the eight, and separated by less than an eye's diameter. The height of the clypeus is also less.

Found at Wooler, in Northumberland.

GENUS LINYPHIA, Latr.

LINYPHIA NEBULOSA.

LINYPHIA NEBULOSA, *Sund.*, Sv. Spindl. Beskr. Vet. Akad. Handl., f. 1829, p. 219.

„ VIVAX, *Blackw.*, l.c., p. 221, pl. xvi., fig. 146.

Closely allied, and very similar in many respects, to *Linyphia thoracica*, Wid. (p. 180), but may be distinguished by the dark central longitudinal line on the cephalo-thorax being finer and distinctly forked or bifid at its fore extremity. The palpi of the male differ also remarkably, the digital joint being smaller, and the palpal organs, though complex, are more compact, wanting the exceedingly long, coiled spine so remarkable in *Linyphia thoracica*. The cubital joint has two or three strong tapering bristles in front, one of which is much longer and stronger than the others, and of a sinuous or bent form. From *Linyphia leprosa*, Ohl., its larger size will serve at once to distinguish it.

Found in houses and other buildings near Manchester, also near Glasgow, and in the neighbourhood of Bath; and very lately received from Mr. F. M. Campbell, of Hoddesdon, Hertfordshire.

LINYPHIA EXPUNCTA.

LINYPHIA EXPUNCTA, *Cambr.*, Ann. and Mag., N.H. 1875, p. 251.

„ LEPIDA, *Id.*, Journ. Linn. Soc. xi., p. 539, pl. xv., fig. 7.

Length of the female, and of an adult male, $1\frac{1}{2}$ line.

Very distinct from any other species known to me. Cephalo-

thorax of the female yellow, margined with dusky blackish. A large wedge-shaped marking behind the eyes, and some converging thoracic lines are suffused with sooty brown.

Legs moderately long, 1.2.4.3., very slender, yellow, slightly marked with black at the joints, and furnished with hairs and fine black spines.

Abdomen large, oval, but not excessively convex above. General colour dull brownish yellow, pretty thickly covered above and on the sides with irregular, crotaceous, yellowish-white spots. In the central line of the fore part is an elongate, tapering, angularly-edged black band, followed by three black spots in a transverse line, the central spot being connected with the point of the band; to these succeed a series of six or eight angular black lines, broken or interrupted at the angles, thus forming a double series of opposed dashes, some of which are slightly curved; one pair of these unite to form, almost on the hinder extremity, a continuous transverse curved line, ending on each side in a blotch; between this line and the spinners are two large black patches closely succeeding each other, and on the middle of each side is a strong irregular, longitudinal, black patch; the underside is dark brown with a black margin.

The male (which has not been before described) is similar to the female in colours and markings, but these are not quite so clearly and distinctly defined as in the latter sex. The palpi are short; the cubital joint is slightly angular in front, and from its most prominent part, near the fore extremity, a long, strong, tapering slightly bent, spine-like bristle is directed downwards and forwards, its hair-like point extending to nearly half-way over the digital joint, though not in contact with it. The radial is equal to the cubital joint in length, and is furnished with short fine bristly hairs only. The digital is large, with a strong lobe near the middle of the outer side, and a small, obtuse, somewhat truncated, prominence on the same side at its base; the palpal organs are prominent and complex with various characteristic corneous spines and processes, of which it would be (as in so many other cases) impossible to give any correct idea

without very accurately enlarged figures. The height of the clypeus is equal to half that of the facial space.

Found near Dunkeld, Scotland, and also near Glasgow.

LINYPHIA ALBULA.

LINYPHIA ALBULA, *Cambr.*, Ann. and Mag. N.H., 3, ser. vii., p. 435, and *Blackw.* l.c., p. 241, pl. xviii., fig. 161.

Length of the female 1-8th of an inch.

Cephalo-thorax pale brownish-yellow, marked with obscure, brownish, converging lines on the sides.

Eyes on black spots.

Legs long and slender; spines few and fine, pale yellowish; tarsi and metatarsi suffused with a darker hue.

Abdomen slender, oval, or rather cylindrical; yellowish-white above and on the sides; a narrow central dull yellowish-brown tapering band, omitting several short, fine, lateral, oblique branches, fines down to dark line above the spinners, just above which are six or eight small brown spots arranged in a longitudinal series of pairs, the second and third pairs being nearer together than the first and second. Underside dull yellow-brown, spotted thickly with white, and bordered on each side by a faint brown line which runs to the spinners.

Found on a holly bush at Hursley, near Winchester, in May, 1860. It is apparently allied to *Linyphia peltata* (p. 229).

LINYPHIA SUBNIGRIPES.

LINYPHIA SUBNIGRIPES, *Cambr.*, Ann. and Mag. N.H., s. 5, vol. iv., p. 204 (1879).

Length of an adult female $1\frac{3}{4}$ lines.

The cephalo-thorax is of ordinary form; its colour is yellow-brown, marked with a dusky-brown marginal line and indistinct converging bars, following the course of the normal indentations. There is also a central longitudinal line of the same colour.

The eyes are seated on black spots, those of the posterior row

form a transverse straight line; the interval between those of the hind-central pair being greater than that between each and the hind-lateral eye on its side; the fore-central pair are placed on a prominence which brings them rather considerably in advance of the rest.

The legs are long, slender, and tapering, furnished with hairs, and distinct, prominent, but not very strong, spines; they are similar in colour to the cephalo-thorax, excepting the tibiæ and metatarsi of the first, second and fourth pairs, and part of the metatarsi of the third pair, all which are deep blackish-brown. The lengths of the 2nd and 4th pair differ but little if anything; the 1st pair are the longest, and the 3rd shortest. The palpi are, like the legs, furnished with hairs and spines; they are of a yellow-brown colour, the radial and digital joints being black-brown.

The abdomen is oviform, and projects a little over the hinder part of the thorax; it is of a dull yellowish-brown hue marked (especially above) with numerous irregularly-shaped, yellowish-white, somewhat shining, crotaceous spots, whose disposition leaves an indistinctly defined, longitudinal, central, yellowish-brown stripe on the fore-half of the upper side, and some oblique lateral ones.

The genital aperture is small, not very prominent, but of characteristic form, and dark red-brown colour.

A single example of this spider was kindly sent to me by Mr. F. Workman, by whom it was found near Belfast in the autumn of 1878. It is allied to *Linyphia luteola*, Blackw. (p. 194), but the dark brown portion of the legs and palpi distinguish it at once from that, and from all other nearly allied species known to me.

LINYPHIA ALTICEPS.

LINYPHIA ALTICEPS, *Sund.*, Svenska Spind. Beskr. in Kongl., Vet-Akad. Handl. 1832, 261; and *Cambr.*, Trans. Linn. Soc. xxviii., p. 535.

Closely allied to and nearly resembling in colours and mark-

ings *Linyphia luteola* (p. 194), but rather larger. The male may be easily distinguished by the distinct prolongation of the apex of the caput into a conical point between the fore-central eyes. The palpi also differ a little in structure.

Found on the Cheviot Hills, and in other parts of Scotland.

LINYPHIA CRUCIGERA.

LINYPHIA CRUCIGERA, *Blackw.*, Ann. and Mag. N.H. Oct., 1863.

Length of the female 1 line.

Cephalo-thorax yellowish-brown, with a dark brown, rather diffused, broad, marginal border, and a dark patch at the junction of the caput and thorax.

Legs long, slender, pale yellow; spines few, long, and slender.

Palpi, of an immature male short, tumid; palpal bulb very large.

Abdomen brownish-yellow or yellowish-white above, with a black-brown cruciform marking on the fore-half. The anterior part of the shaft is enlarged, and the cross-piece, near the middle, strong and curved, the convexity of the curve directed backwards. The posterior half of the shaft is a mere line enlarged in one place into a spot. On each side of the hinder part of the abdomen, and running to the spinners is a strong, longitudinal, black band more or less uneven on the edges. The sides are blackish-brown; the under part dark yellow-brown.

Found in Wicken Fen, Cambridgeshire, but apparently very rare.

LINYPHIA CINGULIPES.

LINYPHIA CINGULIPES, *Cambr.*, Trans. Linn. Soc. xxvii., p. 428, pl. 55, No. 22.

Length of the female 2 lines.

Cephalo-thorax dull greenish yellow-brown, with deeper converging lines on the sides, and a narrow black marginal line. Ocular region slightly prominent. Legs moderate in strength

and length (1.2.4.3.), pale yellow tinged with greenish brown, broadly and distinctly banded, excepting the tarsi, with brownish black. Abdomen dull greenish yellow-white. A broadish longitudinal black band runs backwards to the spinners from near the fore extremity of the upper side, and contains two somewhat triangular whitish markings forwards, each divided longitudinally by a black line; following these markings towards the spinners are several more or less angular whitish lines, the angles directed forwards. The sides are irregularly marked with blackish, the under side completely black. The process connected with the genital aperture is (like that of all the females of this genus) prominent and characteristic in its form.

Found in Wicken Fen, Cambridgeshire, in the month of February.

LINYPHIA FLAVIPES.

LINYPHIA FLAVIPES, *Blackw.*, l.c., p. 247, pl. xvii., fig. 166.

Length of the male 1 line. Male rather smaller and longer legged.

This spider is very closely allied to, even if it be not identical with, *Linyphia pullata*, Cambr. (p. 197). As, however, Mr. Blackwall on examination of the latter, at the time of its discovery, considered it to be distinct, I have so retained it.

Cephalo-thorax brownish black; legs long, slender; spines fine, yellow; radial joint of palpus of male stronger than the cubital, and somewhat produced in front; digital joint oval, with a lobe on the outer side; palpal organs directed outwards, protuberant, complex, with a curved prominent process near the base on the outer side, and a few very short pointed ones at the extremity. Abdomen brownish black; some examples have an obscure series of slightly angular lines of a pale brown hue along the upper side.

Found among moss, in woods in summer time, in North Wales, and also in Norfolk. [I have never seen an authentic example of this spider.]

LINYPHIA MEADII.

LINYPHIA MEADII, *Blackw.*, l.c., p. 232, pl. xvi., fig. 154.

Length of the female 1·8th of an inch. Male somewhat smaller.

Cephalo-thorax light yellow-brown. Legs and palpi rather paler. Spines on the legs fine; relative length of the legs 1.2.4.3. Cubital and radial joints of the male palpus short; radial produced at its fore extremity on inner side; digital joint somewhat oval in form, with a large lobe on its outer side; palpal organs directed outwards, prominent, complex, with a large process consisting of three parts, at their base. The superior portion, which is curved at its extremity, is in contact with the radial joint on the outer side, and the other two are directed downwards; the one which is situated nearer to the inner side, and is the slenderer and more curved, has a projection on the outside of its curvature, and another within, nearer to its base; a short prominent curved process, whose point is in contact with a small semi-transparent membrane, is at the extremity of the palpal organs.

Abdomen dull olive-green, with a series of obscure, pale, yellowish-brown, oblique streaks on each side of the medial line of upper part, and a band of same hue along each side.

This spider is allied nearly to *Linyphia approximata*, Cambr. (p. 199); but the palpal organs of this last species differ in structure, terminating with a slender, black, coiled spine; and other differences also appear to exist in both sexes.

Found under stones near Bradford, Yorkshire, early in the month of May. [I have not seen this spider.]

LINYPHIA GRACILIS.

LINYPHIA GRACILIS, *Blackw.*, l.c., p. 245, pl. xvii., fig. 163.

Length of the male 1 line.

Cephalo-thorax brown-black. Legs long and slender, spines erect, pale brown tinged with red. Palpi short, similar in colour

to the legs ; radial joint much stronger than the cubital. Digital joint oval ; palpal organs prominent, complex, directed outwards, with a small glossy protuberance on the outer side near the base, and a fine circularly curved spine at their extremity. Abdomen brownish-black. Some individuals have a series of obscure angular lines of a brownish hue along the middle of the upper part.

This spider appears to be nearly allied to, and perhaps only a variety of, *Linyphia circumspecta*, Blackw. (p. 202), but I have never seen an authentic example.

Found on railways near Crumpsall Hall, Manchester, in the month of November.

LINYPHIA ANGULATA, sp. n.

LINYPHIA ANGULIPALPIS, *Cambr.*, Trans. Linn. Soc. xxviii., p. 536.

Length of the male (allowing for the probable length of the abdomen, which was wanting in the only example I have seen) rather over 1 line.

Cephalo-thorax brownish-yellow, with very indistinct converging brownish lines on the sides, and an obscure black margin alone. Height of the clypeus equal to half that of the facial space. Eyes on black spots ; the interval between those of the hind-central pair is a little greater than that between each and the lateral eye next to it. Legs long, slender, yellowish, strongly tinged with brown on the tibiæ and metatarsi. Spines slender. Palpi yellow, digital joint yellow-brown. Cubital joint produced in front into an angular form, terminating with a strong, black, tapering, sinuous, fine-pointed bristle, longer and stronger than the spines on the tibiæ of the legs. Radial joint a little produced in front. Digital joint large, with a strongish blunt-pointed prominence at its base on the inner side ; palpal organs very prominent and complex ; among their various processes is a long, strong one running rather beneath the outer side, and terminating in a black furcate form just beyond their extremity.

The abdomen was unfortunately wanting.

This spider is nearly allied to *Linyphia angulipalpis*, Westr., but is larger, and differs in the longer, stronger, sinuous bristle on the apex of the angular cubital joint of the palpus (this bristle in *Linyphia angulipalpis* is straight); also in that species the prominence at the base of the digital joint is not so strong, and is slightly obliquely truncated at its extremity. The palpal organs also differ considerably in their structure.

A single example found on the Cheviots, and sent to me by Mr. James Hardy, was supposed, at first, to have been *Linyphia angulipalpis*, Westr.

LINYPHIA RUFA.

LINYPHIA RUFA, Westr., Aran. Sacc. p. 121; and Cambr., Trans.

Linn. Soc. xxviii., p. 536. 1875

PEDINA CRISTATA, Menge, Preuss. Spinn. p. 125, pl. xxiii., fig. 49.

Length of the male $2\frac{1}{2}$ lines. Female rather larger.

Cephalo-thorax, legs, and palpi yellow. Eyes small, of nearly equal size, all pale coloured, those of the posterior row separated by equal intervals.

Legs long, moderately strong, not very different in length, 1.2.4.3. Spines short, prominent.

Palpi rather short, radial joint expanded on all sides at its extremity, and most produced in a somewhat pointed form in front, with some prominent bristly hairs on each side. Digital joint not very large, but at its hinder extremity, directed inwards, is a strong, pale-coloured, blunt-ended prominence almost at right angles to the joint, and terminating with a compact pencil or brush of straight, black, spine-like bristles of equal length, but whose ends appear to be a little dilated. The length of this brush about equals the length of the prominence. Palpal organs directed outwards, very prominent and complex, with a strong furcate process at their base on the outer side.

Abdomen dull greenish-sooty coloured, with a series of obscure pale transverse angular lines along the middle of the upper side.

The sexes resemble each other in colours.

An exceedingly remarkable and fine species, found near Wooler, in Northumberland, in autumn, by Mr. James Hardy, and more recently sent to me from the neighbourhood of Glasgow by Mr. H. C. Young.

LINYPHIA RETICULATA.

LINYPHIA RETICULATA, *Cambr.*, Trans. Linn. Soc. xxviii., p. 540, pl. xlv., fig 11.

Length of the male $1\frac{3}{4}$ lines, female $2\frac{1}{2}$ lines.

The whole of the fore-part is of a clear brightish orange-yellow colour; the abdomen dull whitey-brown, marked with a kind of network-veining of a paler hue. It is allied to *Linyphia pallida*, *Cambr.* (p. 216), and *Linyphia decens*, *Ibid.* (p. 217), but is larger and differs from them in the structure of the palpal organs. Eyes of the hind-central pair nearer together than each is to the hind-lateral eye next to it, being separated by only about an eye's diameter.

Legs moderately long and strong. Spines very fine, perhaps most correctly termed, spine-like bristles. Palpi slender; the cubital joint has, near the middle of its fore extremity on the upper side several bristly hairs, of which one is longer and stronger than the rest, and slightly sinuous; the radial joint spreads rather prominently in front, being produced on the upper side in a somewhat obtusely angular form, and bearing a marginal row of bristly hairs. Digital joint oval, with a strong lobe on the other side. Palpal organs prominent and complex, with a large curved, irregularly shaped process at their base on the outer side.

The female resembles the male in colours, and has a remarkably long, prominent process connected with the genital aperture and directed backwards, being somewhat like that of *Linyphia insignis* (p. 219).

Found on the Cheviot Hills, Scotland.

LINYPHIA ARCANA.

LINYPHIA ARCANA, *Cambr.*, Trans. Linn. Soc. xxviii., p. 539, pl. xlv., fig. 10.

Length of the male $1\frac{1}{2}$ line.

Cephalo-thorax, legs, palpi, and falcos yellow, slightly tinged with orange; the tibiæ of the two first pairs of legs a little dusky.

Abdomen dull yellow-brown. The height of the clypeus exceeds half that of the facial space.

Legs short and tolerably strong, 4.1.2.3. Spines very few and slender; on the two first pairs they are simply strong bristles.

Palpi short; the cubital joint has a single, slender, not very long, straight, tapering black bristle directed forwards from near its fore extremity on the upper side; the radial joint is stronger than the cubital, a little obtusely produced in front, and slightly gibbous behind. Digital joint large, slightly prominent towards the base near the outer side, at about the middle of which there is a slight lobe; palpal organs prominent and complex; on the outer side, at their base, is a large, somewhat concave, crescent-shaped process, at the upper margin of which are two small prominences, the posterior prominence being the stronger.

Found on the Cheviot Hills.

LINYPHIA CONTRITA.

LINYPHIA CONTRITA, *Cambr.*, Trans. Linn. Soc. xxviii., p. 537 pl. xlv., fig. 7.

Length of the male 1 line.

Cephalo-thorax and other fore-parts pale yellow. Abdomen dusky whitish; but as the only example I have seen had evidently not long attained maturity, the colours had not deepened to their proper hue, and were not therefore reliable. Legs longish and slender; spines few and fine. Palpi short; digital joint of moderate size, with a small, somewhat conical prominence near its base on the outer side. Palpal organs moderately complex,

with a curved, rather slender, some-what crescent-shaped process on their outer side.

Found on the Cheviot Hills.

LINYPHIA MICROPHTHALMA.

LINYPHIA MICROPHTHALMA, *Cambr.*, Trans. Linn. Soc. xxvii., p. 434, pl. 56, No. 25.

Length of the male 1 line.

Closely allied to *Linyphia decens* (p. 217).

Cephalo-thorax brownish-yellow, rather depressed, and with very slight lateral marginal constrictions at the caput. Eyes very small, all pearly white, in two nearly approximated transverse lines; the interval between those of the hind-central pair is rather less than that between each and the hind-lateral eye next to it. Legs long, slender, yellow; spines few but long. Falees long, slightly divergent. Palpi slender, radial joint stronger than the cubital, and enlarged towards its fore extremity. Digital joint large, with a prominence near the base on the outer margin, rather darker coloured than the rest, and furnished with bristly hairs on the upper side. Palpal organs prominent and complex; at their base on the outer side is a large, prominent, strongly curved process, with a small notch near its rounded termination; and at their extremity is a short, duplex, coiled black spine. Abdomen elongato-oval, of a somewhat depressed form; its colour being yellowish, suffused slightly with sooty-brown.

Found in the neighbourhood of London, by the late Mr. Richard Beck.

LINYPHIA MARGINATA.

LINYPHIA MARGINATA, *C. L. Koch*, *Die Arachn.*, Bd. xii. p. 118, Tab. 423, figs. 1041 and 1042.

„ TRIANGULARIS, *Blackw.*, l.c., p. 212, pl. xv., fig. 139.

Length of the female 1-5th of an inch. The male being smaller and slenderer in the abdomen.

Closely allied to *Linyphia triangularis*, Clerk. (p. 227), but easily distinguished by a distinct double longitudinal row of small yellowish-white spots on the central abdominal band, which is black, more distinctly defined, and instead of being completely divided at the summit of the hinder part of the abdomen by a whitish stripe, the dividing stripe is not continuous, being more or less interrupted, especially in the middle. The legs of the female are strongly tinged with green. The falces of the male are neither so excessively long, projecting or divergent, as in *Linyphia triangularis*, Clerk., being only ordinarily developed, vertical and straight. The digital joint of the palpus is larger, the palpal organs are more complex and differ considerably in structure.

Found under overhanging banks and rocks in moist and shady places near Loch Katrine, in Scotland, and (according to Mr. Blackwall, l.c.) in the South-eastern counties of England.

LINYPHIA PERNIX.

LINYPHIA PERNIX, *Blackw.*, l.c., p. 239.

Length of the male 1-10th of an inch.

Cephalo-thorax dark brown, with some coarse hairs, directed forwards, behind the eyes. Legs long, slender, 1.2.4.3., furnished with spines, and of a red colour. Palpi short, red; digital joint dark brown, with a large lobe on the outer side near the base; radial stronger than cubital, and has some long hairs in front. Palpal organs highly developed, and complex, with a broad compressed, curved process projecting nearly at right angles from their base on the outer side. Falces long, strong, protuberant at their base in front, inclined towards the sternum, and of a reddish-brown colour. Abdomen yellowish-brown above, with a series of angular black bars along the middle, the vertices of the bars indistinct, and the extremities of the anterior ones much more strongly marked than the rest. Above the spinners is a small yellowish-white spot; under side pale brown.

Found on juniper bushes at Southgate in the month of May.
(I have never seen this spider.)

LINYPHIA NIGELLA.

LINYPHIA NIGELLA, *Blackw.*, l.c., p. 240.

Length of the male 1-8th of an inch.

Cephalo-thorax dark brown, approaching black. Legs long, 1.2.4.3., slender, furnished with a few spines, pale yellowish-brown, the femora tinged with red. Cubital and radial joints of the palpi short; radial strongest, and produced at its extremity on the inner side. Digital joint irregular oval; palpal organs directed outwards, highly developed, complex, with a small projection at the upper part in front, and a large spine, originating at the upper part, extends to the termination of the joint where it is curved into a circular form, the extremity projecting a little.

Abdomen glossy, brownish-black; in some examples a series of obscure angular yellowish-brown lines may be seen along the middle of the upper side.

Found under pieces of rock in North Wales in the month of September. [I have not seen this spider.]

LINYPHIA PULCHELLA.

LINYPHIA PULCHELLA, *Blackw.*, l.c., p. 242.

Length of the male 1-10th of an inch.

Cephalo-thorax slightly compressed, and prominent in front. Colour yellowish-brown. Legs similar in colour, moderately long, spines slender. Palpi yellowish-brown, cubital and radial joints short, the latter strongest. The digital joint has a lobe on its outer side. Palpal organs highly developed, and very complex.

Abdomen glossy; upper part yellowish-white, with a series of obscure dark angular lines along the middle. Those in front least conspicuous. Sides and underpart pale yellowish-brown. Spiracular plates dark yellow-brown; between them a prominent transverse fold.

Found among grass, in North Wales, in the month of September. [I have never seen this spider.]

LINYPHIA FURVA.

LINYPHIA FURVA, *Blackw.*, l.c., p. 253.

Length of the female 1-9th of an inch. Male rather smaller.

Cephalo-thorax dark-brown, approaching black. Legs long and slender; spines erect, and, with the palpi, yellowish-brown. Falces long, strong, divergent at the extremity, and inclined towards the sternum. Abdomen glossy, brownish-black. Male similar in colour. Cubital and radial joints of the palpi short; radial much strongest and produced on the inner side. Digital joint somewhat oval, with a prominent lobe on the inner side near its extremity. Palpal organs highly developed, and complex, with two contiguous, black, spiral spines, enveloped in delicate membrane, at their extremity.

Found under stones in moist meadows, in North Wales, in the month of May. [I have not seen this spider.]

LINYPHIA TENELLA.

LINYPHIA TENELLA, *Blackw.*, l.c., p. 246.

Length of the female 1-11th of an inch.

Cephalo-thorax very dark brown. Eyes on black spots, the four central ones on a slight protuberance. Legs long, slender, 1.4.2.3. Spines fine; colour light yellowish-red. Abdomen glossy, dull olive-green; under part darkest. Along the middle of the upper side is a very obscure series of angular lines of a deeper shade. The genital process consists of two parallel, convex, glossy, red-brown prominences.

Found at Bradford, Yorkshire, in the month of September. [I have not seen this spider.]

LINYPHIA NASATA.

LINYPHIA NASATA, *Blackw.*, l.c., p. 237, pl. xviii., fig. 158.

Length of the female 1-12th of an inch.

Cephalo-thorax subtriangular, with a nasiform process in the middle of the frontal margin, caused by a deep notch on each side of it. Colour pale brown; the sides, suddenly depressed, having a darkish green tint; underneath dark brown. Abdomen pale yellowish-brown, with a row of obsolete brown maculæ on each side of the medial line of the upper part; between the fore extremities of these rows is a lanceolate, longitudinal, pale fascia. Legs of a pale brown colour, long, slender, and furnished with spines; tarsi black.

Not uncommon in the Grove at Cranmore, in Ireland. [I have not seen this spider.]





FAMILY EPEIRIDES.

GENUS META, *C. L. Koch.*

META MENARDI.

EPEIRA MENARDI, *Latr.*, Gen., Crust., et Ins., tom. 1, p. 108.

EPEIRA FUSCA, *Blackw.*, l.c., p. 349, pl. xxvi., fig. 252.

Length of the female upwards of half an inch. Male rather smaller.

Cophalo-thorax reddish-brown, with brownish-black lateral margins, and a longitudinal central band of the same colour, enlarged and slightly bifid near the eyes. Legs long, red-brown, with broad brownish-black annuli; spines numerous, erect, black. Abdomen, yellowish or reddish-brown above, with a large, oval, brownish-black spot in front; on each side of the medial line; the two spots being nearly connected in front by a narrow band issuing from each; between these spots and the spinners is a series of curved, transverse, brownish-black bars. Sides brownish-black, freckled with dull yellow, and with a slightly curved yellowish band along each. Under part dark red-brown or brownish-black, bordered on each side by an obscure yellowish band.

Cubital and radial joints of the male palpus short; the radial is strongest, and has a small pointed apophysis at its extremity in front. Digital joint of irregular complex form; palpal organs highly developed and also very complex.

This spider is easily distinguished from the two other British species of the genus (pp. 239—241) by its much larger size and different colours.

Found in cellars, caves, old ruinous buildings, and other obscure damp situations in North Wales and the north of England (County Durham), where, to the walls and roofs of such situations, the female suspends her large, balloon-shaped, delicate white silken cocoon, through the walls of which the pale flesh-coloured eggs within can be plainly seen. There seems to be no reason why, in suitable situations, this fine spider should not occur in the south of England—perhaps in Dorsetshire. I have received it from Brittany.

GENUS EPEIRA, *Walck.*

EPEIRA CEROPEGIA.

EPEIRA CEROPEGIA, *Walck., Blackw.*, l.c. p. 347, pl. xxv., fig. 250.

Length of the male 3-10ths of an inch. Female rather smaller.

This fine and handsome spider is nearly allied to *Epëira adianta* (p. 261), resembling it closely in pattern, but is much larger, and generally darker coloured. The fore half also of the tibia of the second pair of legs is curved and considerably enlarged on the inner side, where it is armed with some prominent and extra-strong spines. The palpal organs together with the digital joint form a very large mass. The former are very prominent and complex, with several strong, very projecting pointed processes on their outer side towards their fore extremity. These processes are much stronger and more conspicuous than those of *Epëira adianta*.

Found by the late Mr. Francis Walker, at Piercefield, near Chepstow, Monmouthshire, in the autumn of 1853, since which time it has not, so far as I am aware, been met with in Great Britain.

EPEIRA ALSINE.

EPEIRA ALSINE, *Walck.*, Ins. Apt. ii., p. 33.

EPEIRA LUTEA, *C. L. Koch*, *Blackw.*, l.c., p. 345, pl. xxv., fig. 249.

Length of the female 1-4th of an inch.

Cephalo-thorax pale yellow-red, with a brownish-red line from the middle of the hinder part of the ocular area to the thoracic junction, where it meets two others running from the lateral eyes. Lateral margins dark brown, and immediately above, on each side is a dark red-brown longitudinal band. The hind-central eyes are rather nearer to each other than the fore-centrals. The legs are strong, spinous, and pale yellow-red, with brownish-red annuli. Abdomen very convex above, and projecting greatly over the base of the cephalo-thorax. Upper side pale yellow, finely reticulated with roddish. A broad tapering space, bounded laterally by a slightly sinuous red-brown line, with a narrow outer border of pale yellow, runs from the fore extremity to the spinners, and comprises some small yellow spots somewhat symmetrically disposed; and on the hinder part are several obscure, transverse pale yellow bars, bordered with red-brown. The upper part of the sides is yellowish, and marked with oblique red-brown streaks, below which the sides are reddish-brown; the under part is also of that hue, with a curved pale yellow line on each side.

This handsome spider is allied to *Epëira diademata*, Clk. (p. 266), resembling it a good deal in form, though totally different in colours and markings.

I met with several examples of the female, some years ago, near Tring, Hertfordshire, among coarse grass and other low plants in the open parts of plantations at the beginning of September.

EPEIRA SIGNATA.

EPEIRA SIGNATA, *Blackw.*, l.c., p. 332.

Length of an immature male, 3-16ths of an inch.

Cephalo-thorax dark red-brown thickly clothed with white

hairs, particularly in front; and at the hinder extremity of the caput, close to the thoracic junction, is a conspicuous yellowish-white spot. Legs strong, spinners pale reddish-brown, with deeper annuli, spots and streaks. Abdomen short, broad, dark red-brown on the upper side, freckled with numerous minute spots of a lighter colour; and near the fore extremity is a large yellowish-white spot on each side of the medial line. The sides are paler than the upper part; and along the middle of the under part is a broad, dark, reddish-brown band comprising two curved, yellowish-white lines.

Found many years ago by the late Mr. F. Walker, at Broadstairs, Kent, in the month of September. [I have never seen this spider.]

EPEIRA ORNATA.

EPEIRA ORNATA, *Blackw.*, l.c., p. 346.

Length of the female 1-4th of an inch.

Cephalo-thorax dull yellow tinged with red. Legs similar in colour, strong, and spinous. Abdomen oviform, of a fine bright red colour, the sides and under part palest. Along the upper part, on each side of the medial line, is a series of minute indentations of a light yellow colour. The genital aperture is furnished with a long pale process directed backwards.

Found by the late Mr. F. Walker, in the south of England, in April, 1848. [I have not seen this spider.]





FAMILY ULOBORIDES.

GENUS HYPTIOTES, *Walck.*

This genus, of which only one British species is known, is characterised by a cephalo-thorax as broad or broader than long, and depressed; the lateral constriction, at the caput being very slight. Clypeous projecting. Eyes, unequal in size, in two transverse curved rows across the whole width of the caput, and near together (the convexities of the curves are directed towards each other), forming in fact one long line, since the fore-centrals come close upon the middle of the hinder row; the hind-lateral eyes being not far in front of the hind-centrals; those of the hinder row are the largest. Maxillæ short, strong, inclined towards the labium, which is short and triangular. Legs short, strong, 1.4.2.3. Calamistra on the metatarsi of the fourth pair; and a supernumerary mamillary organ in front of the ordinary spinners.

Abdomen short, projecting greatly over the cephalo-thorax, and humped on the upper side.

HYPTIOTES PARADOXUS.

MITHRAS PARADOXUS, *C. L. Koch*, *Dio Arachn.*, and *Blackw.*, *Ann.* and *Mag.*; N. H. 1862.

Length of the female $2\frac{1}{2}$, and of the male 2 lines.

Cephalo-thorax light yellow-brown, darker on the sides, and clothed with rather coarse greyish-yellow pubescence. Legs pale yellow-brown, hairy, and spinous, mostly so in the male; palpi of the male similar to the legs in colour, and long; radial joint bent, and produced in front, where it is fringed with coarse bristly hairs. Digital joint of enormous size. Palpal organs correspondingly large, prominent, rather complex, and surrounded by

a long, slender, filiform, black, marginal, tortuous spino. Abdomen excessively convex in the female (less so in the male), at the middle of the upper side; it is of a more or less deep yellow-brown colour, mottled with yellowish, whitish, and reddish brown, and clothed with white pubescence.

Found (once only) in the lake district of Cumberland in the summer of 1863.

This is a most remarkable spider, and one of its peculiarities is that it spins a geometric, orbicular snare, from which the largest portion of the circle is uniformly omitted; forming, in fact, a sector of a circle, equal to about its sixth part, and consisting of several lines radiating from a centre, and irregularly crossed by shorter ones. A curious habit is related of a closely allied North American species, *Hyptiotes excavata*, Hentz. This spider sits on the short line into which the rest radiate; the line is rather slack, and the spider holds up the slack portions pretty tightly by means of the tarsal claws of the first pair of legs, and then the moment a fly gets into the snare the spider suddenly lets go the slack with a jerk, which helps considerably to entangle the prey. If unsuccessful, it again gathers up the slack and awaits another chance.

It is possible that our only European species, *Hyptiotes paradoxus*, may have a similar habit, though it has not been yet observed sufficiently to enable this to be ascertained. There seems to be no reason why this spider should not occur more frequently than it has yet been observed, in England, especially in the southern parts, since it is found (though not commonly) in the neighbourhood of Paris and in many other parts of France.





FAMILY THOMISIDES.

GENUS MISUMENA, *Latr.*

MISUMENA TRUNCATA.

ARANEA TRUNCATA, *Pall., Walck., Ins. Apt., 1, p. 515.*

THOMISUS HORRIDUS, *Fabr., Cambr., Trans. Linn. Soc., xxvii., p. 409.*

Length of the female, $3\frac{1}{2}$ lines.

This spider may be readily known from *Misumena vatia*, Clk. (p. 290), by its larger size and darker colours. The tubercle, behind which the hind lateral eye is placed, is larger, of a rather different shape, and gives a more angular form to the fore part of the caput. The abdomen is broader than long; the hinder part, on the upper side, is at least double the width of the fore extremity; it is also more prominent and conical at the outer corners of the hinder part than in *Misumena vatia*. The hinder slope is long, and extremely abrupt; it is of a dull yellowish-brown hue, more or less spotted with whitish, and with several broad, irregular, transverse, whitish, slightly angular, or curved bands. The cephalo-thorax is dark, yellow-brown, mottled with pale brownish-yellow, forming a broad, but not well defined, band along the middle, and with a yellowish-white margin. The legs of the two first pairs are dark yellowish-brown, spotted with dull yellowish; the tibiae and metatarsi being banded with yellow-white. The third pair are of a uniform yellowish hue; the fourth pair are similar, with the genual joints and fore extremities of the tibiae dark reddish yellow-brown.

Found in the neighbourhood of London, and sent to me by the late Mr. Richard Beck, of 31, Cornhill. The male is un-

known to me. M. Simon has founded a separate genus, *Pistius*, upon this spider, chiefly in consequence of the different form of the tubercle between the eyes of the lateral pairs.

GENUS *DILÆA*, *Thor.*,

DILÆA DEVONIENSIN, sp. n.

Length of an immature female, nearly $2\frac{1}{2}$ lines.

The cephalo-thorax, legs, palpi, and other fore parts, are of a brownish-yellow colour, tinged with reddish. A rather radiated area at the thoracic junction, is suffused with whitish. The metatarsi, and the larger portion of the tibiæ of the first two pairs, are armed beneath with two parallel, longitudinal rows of spines. The eyes of the hind central pair are nearer to each other than each is to the lateral eye next to it. The four central eyes form a square, the fore side being a little shorter than the hinder one. The abdomen is oval, of a pale, dull, brownish-yellow hue, mottled with yellowish-white, and with some pale transverse lines along the middle of the upper side.

The spider above described was received some years ago from the late Rev. Hamlet Clark, by whom it was found near Torquay. It has been mislaid, and so overlooked until recently. M. Simon, who has examined this specimen, is of opinion that it belongs to an undescribed species. It is certainly very distinct from any other British Thomisid. Probably, however, the colours have faded since it was caught.

DILÆA ? *FORMOSA*.

THOMISUS FORMOSUS, *Blackw.*, Spid. Great Brit. and Irel., p. 75.

Length of the female, 1.5th of an inch. Male, smaller and slenderer.

Cephalo-thorax large, slightly compressed before, broadly truncated in front, and of a greenish-yellow colour. The legs are of a similar hue; those of the first and second pairs have two longitudinal, parallel rows of spines on the under sides of the

tibiæ and metatarsi. The abdomen is of a uniform, bright red on the upper side, rather paler in the middle part, and with a few obscure transverse lines of a lighter colour above the spinners; sides yellowish-white; under part pale red, mottled with yellowish-white spots.

The male resembles the female in colour, excepting the cephalo-thorax, and its appendages, which are red. The radial joint of the palpus is rather stronger than the cubital, with a large pointed apophysis at its extremity on the outer side; digital joint oval, pointed, and compact at its termination. Palpal organs not very complex.

Found at Southgate, Kent, in May and June, 1848, by the late Mr. F. Walker. [I have never seen this spider, which appears to be a *Dica*, though its generic position is not quite certain.]

GENUS XYSTICUS, *C. L. Koch*.

XYSTICUS CINEREUS.

XYSTICUS CINEREUS, *C. L. Koch, Blackw.*, l.c., p. 74, pl. iv., fig. 43.

Length of the female, 1-5th of an inch.

Very nearly allied to *Xysticus sabulosus* (p. 301), which it also closely resembles in size, colours, and markings.

The only British example known (found, many years ago, among heather in Berwickshire) is in my possession, but is in so bad a condition that I am unable to give a decided opinion upon it. While, therefore, it possibly may be distinct, I am rather inclined to think it is only an example of the species mentioned — *Xysticus sabulosus*, Hahn.

XYSTICUS BREVIPES,

XYSTICUS BREVIPES, *Hahn, Blackw.*, l.c., p. 67, pl. iv., fig. 37.

Length of the female, 1-5th of an inch.

The sides of the cephalo-thorax are brownish-black, mottled with yellowish-brown; the lateral margins are also yellowish-brown, and a broad, longitudinal band of the same hue,

minutely spotted with reddish-brown, runs from the eyes backwards. Legs short, spinous, and yellowish-brown, mottled with brownish-black. Abdomen large, depressed, corrugated on the sides, thinly clothed with short, strong hairs, much the broadest behind; its colour is yellowish-brown, minutely spotted with red-brown, and with some transverse brownish-black streaks (frequently interrupted in the middle) on the hinder part of the upper side. Sides irregularly streaked, and spotted with brownish-black.

Found under stones in fields near Llanrwst, North Wales. [I have never seen an authentic British type of this species, which, in so far at least as British examples are concerned, I suspect strongly to be identical with *Xysticus luctuosus* (p. 305). At any rate some Dorset examples of the immature male and females, considered by Mr. Blackwall some years ago to be *Xysticus brevipes*, Hahn., are undoubtedly only examples of *Xysticus luctuosus*, Bl.]

XYSTICUS LYNCEUS.

XYSTICUS LYNCEUS, *Latr.*, Gen. Crust. et Ins. i., p. 112.

THOMISUS ATOMARIUS, *Blackw.*, l.c. 74, pl. iv., fig. 42.

Length of the female, 1-5th of an inch.

Cephalo-thorax brownish-yellow, with two dark brown longitudinal lines on each side; the lower ones longest, and parallel to the lateral margins. Legs and palpi brownish-yellow, minutely spotted with dark brown, particularly on the upper part. Abdomen depressed, broadest behind, and of a pale reddish-brown colour, freckled with dark brown spots, which are much the most numerous on the upper part, and vary in number, size, and arrangement in different individuals.

Found (on the authority of the late Dr. Leach) in Scotland. I once met with an example (decided by Mr. Blackwall to belong to this species, *X. atomarius*) in the New Forest, Hants, but unfortunately it has been lost. It agreed, however, very exactly with the above description, and is, I think, a good species.

XYSTICUS GLOVERI.

THOMISUS GLOVERI *Blackw.*, Ann. and Mag. N. H., December, 1868.

Length of the female rather less than $\frac{1}{4}$ th of an inch.

In form, colour, and markings this spider is very like *Xysticus Cambridgii*, Bl. (p. 308), but smaller. Sides of the cephalo-thorax dark reddish-brown, the posterior part of the central band white; the anterior part wholly occupied by the usual marking, which is light red-brown, and pointed behind; ocular area marked with white. Legs marked, suffused, and annulated with dark red-brown, yellowish, and white; the dark annulations being most distinct on the third and fourth pairs. Abdomen oval, truncate before, rather broadest towards the hinder part, and corrugated on the sides. Upper side dark dull red, with a narrow, longitudinal, rather tapering whitish stripe near the middle, and some short obscure whitish bars marked and speckled with black on the hinder half. The sides have their upper margin whitish, marked posteriorly with some slightly oblique lines of more or less confluent black spots. The rest of the sides and under part are dark brown, slightly mottled with whitish-yellow. The genital aperture is on a strongish prominence.

Found, once only, at Hendre House, Llanrwst, in the month of September, by Mr. Blackwall.

GENUS PHILODROMUS, *Walck.*

PHILODROMUS LINEATIPES.

PHILODROMUS LINEATIPES, *Cambr.*, Ann. and Mag., N. H. 3 s., vol. 1, p. 122, pl. xi., fig. 5.

Length of the male and female rather more than $2\frac{1}{2}$ lines.

Cephalo-thorax dark chocolate brown. Caput yellowish brown, with some darker linear markings; clypeus paler still; thorax marked with fine, yellow-brown, converging lines on the sides. Legs dark brown; femora brownish yellow, with a broadish and distinct longitudinal brown stripe on their outer sides, and

a few similar obscure spots in front, the stripes on the genua and tibiæ being less distinct. The anterior extremity of each of the femora, genua, and tibiæ is marked on the upper side with a whitish yellow spot. Falces dark brown, with a pale patch in the middle of the front of each. Palpi (of the male) darkish brown, radial and digital joints darkest. The radial joint is bent, less strong than the cubital, and its outer extremity is produced into a large bifid apophysis; the anterior limb of this apophysis is black and obtuse, the posterior, which is also rather beneath, is much the largest and strongest, and of a pale hue; digital joint large, thickly clothed with hairs, oval, and rather obtusely pointed; palpal organs large, prominent, simple in structure, and of a very deep brown-black colour.

Sternum glossy, pale yellow-brown.

Abdomen of an oblong oval form (in the female more distinctly broadest behind); upper part and sides dark chocolate brown, palest in the medial line of the fore part, and marked (chiefly on the sides, and, most conspicuously, on each side of the posterior extremity of the upper part), with white and yellowish spots. Under part dull brownish, mottled with white on the lateral margins.

The sexes are very similar in colours and markings; the female, however, has the genua and tibiæ more distinctly marked with dark stripes than the male. Although the adults here described are, excepting in one important character—the linear dark stripes on the legs—so exceedingly unlike, in colours and markings, the very young example described (l.c. supra), I am convinced that they are of the same species.

Found near Braemar, and also in Perthshire. Nearly allied to *Philodromus emarginatus* (supra, p. 333).

PHILODROMUS CLARKII.

PHILODROMUS CLARKII, *Blackw.*, Spid. Great Brit. and Irel., p. 96.

Length of the male 1-7th of an inch.

Cephalo-thorax and legs red-brown, freckled with minute spots

of a deeper hue. Palpi short and similar to the legs in colour; the radial joint is smaller than the cubital, and has a large somewhat pointed apophysis at its extremity on the outer side. Digital joint irregular-oval in form, convex at the base, and depressed near the middle. Palpal organs not very complex, and moderately developed; a long slender black spine prominent at its origin on the inner side, is curved round their extremity. The fore part of the digital joint is produced beyond the concavity containing these organs.

Abdomen oviform, red-brown, freckled with minute spots of a darker hue; palest on the sides. A series of oblique, not very distinct, yellowish-white spots occurs on each side of the medial hue; at their hinder extremity the two series meet and form an oblong lanceolate figure.

Found at Southgate, Kent, in June, 1849, by the late Mr. F. Walker. [I have not seen this spider, which, from the description, appears to be of a very distinct species.]

PHILODROMUS VARIATUS.

PHILODROMUS VARIATUS, *Blackw.*, l.c., p. 97.

Length of the female $\frac{3}{4}$ th of an inch.

Cephalo-thorax short, broad, slightly compressed before. The sides are of a dark brown colour mixed with yellow-brown, and a broad yellow-brown band runs along the middle. Legs pale reddish brown, deepest at the joints. Falces reddish brown. Abdomen oviform, yellowish brown on the upper side, mingled with red-brown and very dark brown. A very deep brown band, bordered on each side by a pale yellow-brown one, runs from the fore extremity along the middle to nearly half of its length. Near the middle are several oblique dark brown patches, behind which there is a curved transverse line of the same colour. A black streak runs upwards from each upper spinner, the space included being of a glossy yellow-brown hue. Sides red-brown, blended with brownish-black. Under part yellowish white,

faintly tinged with dull green, and with a broad, longitudinal, central, dark brown band.

Found on rails and gates, in summer, near Llanrwst, North Wales, in sunshine. [I have not seen this spider.]

PHILODROMUS MISTUS.

PHILODROMUS MISTUS, *Blackw.*, l.c., p. 98.

Length of the female nearly $\frac{1}{4}$ th of an inch. Male rather smaller.

Cephalo-thorax of the female yellowish brown, with a broad, longitudinal, dark brown band on each side, and narrow, pale yellowish white margins. Legs pale yellowish brown, interspersed with minute, almost microscopic, blackish spots. Abdomen oviform, pale yellowish brown above, mottled with reddish brown, and with an obscure, oblong-oval, reddish brown medial band extending from the fore extremity to nearly half of its length. The upper side has an irregular dark reddish brown marginal band, from which some imperfectly defined streaks pass obliquely upwards, particularly in the posterior region. Sides and under part dull yellowish white, minutely spotted with reddish brown; the under part also has three longitudinal red-brown bands, which converge into a point near the spinners.

The cephalo-thorax of the male is dark brown, with a paler broad band along the middle, and narrow yellowish white margins. The radial joints of the palpi have three apophyses at their extremities; one on the under side is short, strong, and furnished with two pointed prominences, another longer and acute is on the outer side, and the third, which is very small, is in front. Digital joint somewhat oval, but prominent on the outer side; palpal organs highly developed, but not very complex, with a fine spine curved from the inner side round their extremity. Abdomen dark brown, approaching black, freckled above with white; the oblong-oval band on the fore part imperfectly defined by an obscure border of whitish hairs; sides

brownish. The hairs on the cephalo-thorax and abdomen reflect, in a strong light, brilliant tints of green and purple.

Found in the same localities as *Philodromus variatus*, Blackw., in May and June, and nearly resembling *Philodromus cespiticolis*, Walek.

[I have never seen this spider.]





FAMILY LYCOSIDES.

GENUS PIRATA, Sund.

PIRATA KNORRII.

ARANEA KNORRII, Scop. Ent. Carn., p. 403.

LYCOSA PISCATORIA, C. L. Koch, Dio. Arachn. xv., p. 6, Tab. 506, fig. 1417—1419.

PIRATA KNORRII, Cambr., Entomologist 1877, vol. x., p. 204, and 206.

Length of the male rather over $2\frac{1}{2}$ lines. Female somewhat larger.

Closely allied, and very similar, both to *Pirata piraticus*, Clk. (p. 353), and *Pirata piscatorius*, Ibid. (p. 351). It is, however, not nearly so large as the latter, and differs in the form of the lateral and central bands on the cephalo-thorax. The central band is irregular on the edges, strongly constricted just at the hinder part of the caput, and has its fore part almost entirely occupied (excepting a marginal line) by the dark, tapering, or spear-headed marking. The marginal bands are also very irregular, or jagged, on their upper edges, and are (apparently) less conspicuously clothed with white hairs than in *Pirata piscatorius*. The same differences distinguish it also from *Pirata piraticus*. From both it also differs in having the legs distinctly annulated with light yellow-brown and deep brown. It is also a more hirsute spider than *Pirata piraticus*, and has a dark brown sternum in the female, partly divided in front by a longitudinal, central, yellowish stripe. From *Pirata hygrophilus* (p. 352) it may be distinguished by its smaller size, and more distinctly annulated legs; also by the pale marginal bands of the cephalo-

thorax having a dark one between them and the actual margin ; as well by the more constricted form at the occiput of the central band, and the bright, reddish, yellow-brown normal marking on the fore part of the abdomen.

Found in the Isle of Arran.

GENUS TROCHOSA, *C. L. Koch.*

TROCHOSA BIUNGUICULATA.

LYCOSA BIUNGUICULATA, *Cambr.*, Trans. Linn. Soc. xxviii., p. 526, pl. xlv., fig. 2.

Length of the male nearly 4 lines.

This spider belongs to the *Trochosa picta* group.

Cephalo-thorax yellow-brown, thickly clothed with a short, yellowish-grey pubescence, and with some dark converging lines on the sides ; the two strongest of the lines are those which indicate the junction of the caput and thorax. Legs strong, moderately long, 4.1.2.3.; but little difference between 1.2. and 3 ; colour pale lemon yellow ; femora and genua slightly marked with a few obscure, reddish yellow-brown maculæ. Annulation, if any, very obscure. Palpi strong, but not very long ; radial and cubital joints of about equal length ; fore extremity of humeral joint, on upper side, has three short, strong, black spines in a transverse row ; digital joint as long as the radial and cubital together, but broader than these, and terminating with two short, strongish, curved, divergent claws. Palpal organs neither very prominent nor complex ; near their middle is a not very long, but rapidly tapering, sharp, fine-pointed spine, whose point directed outwards does not quite reach the edge of the digital joint. Just in front of this spine is another very slender, curved one having a similar direction. Sternum black.

The abdomen, although much shrunken in the only example yet discovered, is apparently of a short, broad-oval form. Its general hue is dark yellow-brown, clothed with reddish hairs, and with several transverse curved, or slightly angular, narrow

stripes on the hinder half ; the normal marking on the fore part of the upper side is bordered by a black line, obtuse at its hinder extremity and thickly clothed with greyish-white hairs. Underside dark yellowish-brown.

Found on a mountain near Braemar, Scotland.

TROCHOSA CINEREA.

ARANEA CINEREA, *Fabr.*, Ent. Syst., ii., p. 423.

„ ALLODROMA, *Walck.*, *Blackw.*, l.c., p. 23, pl. i., fig. 7.

Length of the male from 6 to nearly 8 lines, female rather larger.

This fine spider is nearly allied to *Trochosa picta*, Halm. (p. 358), and has much the appearance of a very large, pale, indistinctly marked, grey, or washed out, example of that species. The markings (especially of the cephalo-thorax) are much obscured by yellowish-grey pubescence, and the legs are very hairy. The radial joints of the palpi are longer than the cubital, but of the same length as the digital ; the last being scarcely broader than the radial. Palpal organs small, not very complex, and confined to a small concavity beneath the base of the digital joint. The large size of this spider will easily prevent its being mistaken for any other British species.

Found in the North of England, Scotland, and in North Wales, among stones on the margins of rivers, and in the dry beds of water courses.

GENUS LYCOSA, *Latr.*

LYCOSA TRAILLII.

LYCOSA TRAILLII, *Cambr.*, Trans. Linn. Soc. xxviii., p. 524, pl. xlv., fig. 1.

Length of the male 3 lines, of the female nearly 4.

In general form and appearance this spider more nearly resembles *Lycosa amentata*, Clk. (p. 370) than any other of our indigenous species.

Cephalo-thorax deep reddish-brown. Caput black. Thorax clothed with greyish pubescence and marked with rather indistinct converging blackish stripes.

Legs long, 4.3.1.2., moderately strong; colour dull reddish yellow-brown, annulated with deep blackish-brown, more distinctly so in the females than in the males; in both sexes the paler portions are clothed with greyish-white pubescence.

Palpi rather long, and strong; similar, in colour and markings, to the legs. Digital joint of the male black; radial joint longer than the cubital, and, with the digital, furnished pretty thickly with black hairs; digital joint long and strong, terminating with a strongish, slightly crooked spine. Palpal organs prominent, especially the hinder portion of the main lobe, which is directed rather backwards; from its upper surface issue two strong, prominent, divergent processes, the inner one curved and double the length and strength of the outer one. These processes are united, or closely adherent, at their base, and have a strongly furcato, and rather conspicuous appearance.

Sternum black.

Abdomen, thickly clothed with hairs, and of a dull sooty-black hue above. Pattern very obscure; normal marking on the fore part of the upper side obscure, yellowish red-brown, bordered by a blacker line, and (apparently) sharp-pointed behind; on the hinder part are some obscure spots formed of whitish hairs, and arranged in a longitudinal row on either side; between the rows are some faint, similarly-formed, transverse, curved lines. Under side vinous brown, thinly clothed with short whitish pubescence.

Found on the mountains near Braemar, Scotland.

LYCOSA FARRENII.

LYCOSA FARRENII, *Cambr.*, Trans. Linn. Soc. xxvii., p. 395, pl. 54,
No. 2.

Length of the male $2\frac{1}{2}$ lines; female rather larger.

In size and general appearance this spider bears some resemblance to several other species of *Lycosa*, but the male may

be at once distinguished by the strong and unusually tumid form of the radial joints of the palpi.

Cephalo-thorax dark yellow-brown, with a broad, longitudinal, deep brown band on each side of the medial line, and another narrow one just above the lateral margins. The central stripe is irregular on its edges. Fore part of the ocular area black.

Falces yellow-brown, with a broadish, deep brown, longitudinal band in front. Legs moderately long, 4.1.2.3., generally yellow-brown; the femora and genua deeply suffused with dark brown, and marked with irregular darker lines; tarsi and metatarsi pale yellowish. Palpi moderate in length, deep yellow-brown, digital and radial joints darkest; the latter is longer than the cubital, and of a roundish, nodiform, or tumid shape, particularly in front. The length of the digital joint is equal to that of the radial and cubital together, its extremity being somewhat drawn out, its broadest part scarcely broader than the radial joint; palpal organs neither very prominent nor complex.

Abdomen dull yellow-brown, with two longitudinal, irregularly dentated, narrowish, black, converging bands, one on each side of the medial line. The normal marking on the fore part has a prominent point on each side, and is bifid at its hinder extremity, between which and the spinners are several obtusely angular, transverse lines. Within the apex of each of these, at the prominent points, and at the angles of the bifid extremity of the normal marking, and also within each outer angle of the dentated longitudinal band, is a small tuft of nearly white hairs, forming, in fact, roughly, three longitudinal lines of rather conspicuous whitish spots on the upper side.

The sides are marked with several oblique, black, broken lines.

The under side of the abdomen has a hoary and, at the same time, a somewhat speckled look, the ordinary hairs being mixed with others of a black and somewhat squamose nature, as well as with numerous short white ones. The sexes resemble each other in colours and markings, but the femora and genua of the female

are paler and more distinctly marked with black lines and markings, and the sternum is yellow, with a marginal border of largish dark brown spots.

Found in Wicken Fen, Cambridgeshire; and very recently received from the neighbourhood of Paris from Monsieur Eugène Simon.

GENUS TARENTULA, *Sund.*

TARENTULA MINIATA.

TARENTULA MINIATA, *C. L. Koch*, Die. Arachn. xiv., p. 196, Tab. 503, fig. 1406, 1408.

LYCOSA NIVALIS, *Cambr.*, Zoologist 1860, p. 6862 and 6895.

„ MINIATA, *Ibid*, Trans. Linn. Soc. xxvii., p. 398.

Length of the female $2\frac{1}{2}$ lines; female rather larger.

Cephalo-thorax dark brown on the sides, with narrow marginal, and broad longitudinal central, reddish yellow-brown bands, clothed with pubescence. The central band is slightly constricted at the occiput, and includes the area of the four posterior eyes.

Legs reddish yellow-brown; femora and tibiae (the latter slightly) annulated with dark brown, and clothed with greyish pubescence.

Palpi similar to the legs in colour; cubital and radial joints short, and of equal length; digital joint of moderate size; palpal organs not very complex.

Abdomen oval, of a reddish yellow-brown colour, more or less clothed with grey, and yellowish grey pubescence. The normal marking is large, of a browner hue, bordered by a marginal black line, with a prominent point on each side, and a somewhat obtuse termination; on each side of this termination, and following it, is a series of more or less obsolete, oblique, blackish lines, or broken angular bars, whose extremities are dilated, forming on each side a longitudinal row of black spots, alternately with

which are white spots or tufts of hairs frequently connected by transverse curved lines of the same nature. The sides are irregularly marked and streaked with black; the under side being yellowish brown, slightly tinged with red, and clothed with yellow-grey pubescence.

A very active, pretty, and distinct species; abundant on the sand hills near Southport, Lancashire, and also received from Scotland. It runs in sunshine only, disappearing instantly on the obscuration of the sun's rays.

The egg-sac is peculiar, being of a pale flesh-coloured-pink hue.

TARENTULA ACULEATA.

ARANEUS ACULEATUS, *Clerck.*, *Thorell*, Syn. Europ. Spiders, p. 323-8.

TARENTULA ACULEATA, *Clerck.*, *Cambr.*, Entomologist 1877, p. 205, and Ann. and Mag., N. H., s. 5, I., p. 124.

Length of the male nearly $4\frac{1}{2}$ lines; female rather larger.

This spider is exceedingly closely allied to *Tarentula pulverulenta*, Clk. (p. 364). It is, however, considerably larger, and the legs are proportionately longer; in the present spider those of the fourth pair are (according to Dr. Thorell, l.c.) nearly three-and-a-half times as long as the cephalo-thorax, while in *Tarentula pulverulenta* they are scarcely three times as long.

The cephalo-thorax in *Tarentula aculeata* is little or no longer than the genual and tibial joints of the fourth pair together, while in the other species it is distinctly longer. These comparative measurements hold good in several examples I have examined. In the present spider also the abdomen appears to me to be of a much more generally grey hue than that of *Tarentula pulverulenta*, and the central, longitudinal, thoracic band less clearly defined.

Found at Braemar, Scotland, and also in the Isle of Arran.

TARENTULA TRABALIS.

ARANEUS TRABALIS, *Clerck.*, Sv. Spindl., p. 97, pl. iv., tab. 9

TARENTULA TRABALIS, *Clerck.*, *Cambr.*, Ann. and Mag., N. H., s. 5, I., p. 125, and *Thorell*, Syn. Europ. Spid., p. 321.

Length of the male from 4 to 4½ lines; female larger.

Allied to *Tarentula aculeata*, Clk., but easily distinguished by its prevailing yellow and yellow-brown hue. The pattern is very similar, but the longitudinal bands on the cephalo-thorax are much more clearly defined, especially the pale lateral marginal ones. The dark lateral bands are deep yellowish brown, the central and marginal ones brightish yellow. The sternum is darkish yellow-brown, with a central longitudinal yellow band, which does not, however, reach the hinder extremity. The abdominal markings (very similar in their colours to those on the cephalo-thorax) are exceedingly well defined. The markings on the femora are also more conspicuous than those of *Tarentula aculeata*.

On the outer side (rather in front) of the humeral joint of the male palpus is a longitudinal line of closely-set black hairs.

This spider is also similar in pattern to *Tarentula pulverulenta*, Clk. (p. 364.), but its much larger size, as well as different colouring, distinguish it at once.

An immature female found near Exeter, and sent to me some years ago by Mr. Edward Parfitt, is the only British example of this fine spider I have yet seen.

I have received adults of both sexes from Franco, where it is abundant, and also from Germany; and have found it myself in Upper Austria and in the Italian Lake District.





FAMILY OXYOPIDES.

A small group of semitropical spiders, containing (as at present known) but two genera only, one of which is represented in Great Britain. They are allied both to the *Lycosides* and *Salticides*. The cephalo-thorax is of peculiar form, rising gradually from the hinder to the fore extremity, which last (caput) is large and obtuse, the lateral constrictions being very slight. Legs long, not very strong, nor greatly differing in length; armed with numerous and very long spines, and terminating with three tarsal claws. Eyes unequal in size, placed in four transverse rows of considerably different length, forming a somewhat lute shape, with the point (in front) truncated.

The spiders of this family are found on low-growing plants, herbage, and bushes. They spin no snare, but capture their prey by leaping upon it, and are very active, running and jumping like the *Salticides*, from plant to plant.

GENUS OXYOPES, *Latr.* SPHASUS, *Walck.*, *Blackw.*

Eyes in a tolerably compact group, seated, as above, in four transverse rows. Those of the foremost row very small, and near together; those of the second row largest and wider apart, forming, with those of the first row, a quadrangular figure, whose posterior side is longest. Those of the third row are smaller than those of the second, and form a line at least double its length. The fourth row is the same length as the second, and its eyes are of the same size. Clypeus very high. Legs long, slender, varying in relative length. Abdomen oval, much the highest in front, sloping gradually to the spinners. Maxillæ long, straight. Labium at least one half

longer than broad, gradually narrowing and pointed at the apex.

OXYOPES LINEATUS.

SPHAPSUS LINEATUS, *Latr., Blackw.*, l.c., p. 43, pl. iii., fig. 22.

Length of the female 1-4th of an inch.

Cephalo-thorax dark brown; the hinder part has a longitudinal yellow-brown central V-shaped marking, the margins are of the same colour, as also is a short streak behind each of the eyes of the third row; and the clypeus has two vertical brown streaks broadest at their upper ends, and continued along the middle of the front of the falces.

Legs brownish-yellow, with brown streaks and other markings, and armed with numerous long spines.

Sternum dark brown, with a central, longitudinal, brownish-yellow line.

Abdomen dark brown, with an elongate, narrow, yellow-brown, longitudinal, central marking on the fore part of the upper side, broadly bordered with dark-brown, and margined again outside this with brownish-yellow, the latter continued backwards in a narrow, tapering form (generally broken into patches and spots) to the spinners. The sides are marked with three more or less oblique yellow-brown stripes. Under side brownish-yellow, with a broad, central, longitudinal, dark-brown band.

The male is darker coloured and rather smaller than the female. Cubital joint of palpus very short, radial much longer, with a very large, prominent, slightly curved apophysis at its base on the outer side, longer than the joint, of a broadish, flattened form, obtusely rounded at its extremity, near and above which is a small prominent point; there is also another prominent point below its base; and underneath the joint is a second strong obtusely-pointed apophysis. Digital joint very large, rather pinched in at its fore extremity, and with a large lobe

near its base on the inner side. Palpal organs not very complex, but very prominent at their base.

Several examples found among heather near Lyndhurst, Hampshire, in the month of September, 1858 ; but all immature. The above description of the adults is from some well authenticated continental examples in my collection.





FAMILY SALTICIDES.

GENUS MARPESSA, *C. L. Koch.*

In this Genus the whole spider is of an elongate and depressed form, by which its species may easily be distinguished from those of other British genera. Legs not very different in length, 1.4.2.3., those of 1.4 and 2.3 being respectively almost equal; those of the first pair are very robust; the femora dilated and compressed. Spines on the tibiae and metatarsi. The whole spider entirely clothed with pubescence.

Three species have been recorded in Britain, but neither of them has as yet been found in Dorsetshire.

MARPESSA MUSCOSA.

ARANEUS MUSCOSUS, *Clerck.*, Sv. Spindl. p. 116, pl. v., tab. 12.

SALTICUS TARDIGRADUS, *Blackw.*, l.c., p. 63, pl. iii., fig. 35.

Length of the male nearly $\frac{1}{2}$ -an-inch. Female rather larger.

Cephalo-thorax somewhat quadrilateral, depressed, and densely clothed with black, red-brown, and yellow-white pubescence. Ocular area black. A broad, dark-brown, longitudinal band runs along the middle of the thorax, with a broad marginal band of the same colour on each side, the remaining spaces being dark reddish yellow-brown, clothed with pale hairs. Legs short, 4.1.2.3., strong, particularly those of the first pair, which are of a dark brownish-black, or reddish-brown colour, palest on the tarsi and metatarsi, the rest being yellow-brown, annulated, and marked with black-brown.

Palpi (of the male) short, strong; deep-brown. The humeral joint has an obtuse protuberance near its extremity on its inner side, and the radial has a strong, curved, pointed

apophysis at its extremity on the outer side, the point directed inwards. Digital joint very large, of a broad, oval, flattish form. Palpal organs prominent and complex.

Abdomen elongate-oval, depressed, hairy; its colour is greyish-brown above, with a longitudinal, central, somewhat irregularly dentated, dark blackish band, emitting some lateral, black, ragged, transverse bars, edged more or less broadly and irregularly with yellowish white on their hinder margins; just above the spinners is a large, triangular, pale, whitish area, marked with two or three dark brown angular lines. Sides dark, black-brown. Under side yellow-grey, spotted with black. In some examples the yellow-white on the upper side prevails, but in its general aspect the spider usually appears to be variegated with black, dark-grey, brown, and yellow-white.

The sexes are very similar in colours and markings.

Mr. Blackwall records this fine species from near Lancaster. I have found it myself rather abundantly at Calke Abbey, Derbyshire, in the month of August, 1861, on an old wood-paling fence, in the joints and crevices of which it finds a secure retreat. It is not very active, and its leaping powers seem to be slight. I have also received it from Norfolk and from Sussex, as well as (very recently) from Hoddesdon, in Hertfordshire.

MARPESSA POMATIA.

ATTUS POMATIUS, *Walck.*, Ins. Apt. I., p. 461.

SALTICUS BLACKWALLII, *Clark.*, *Blackw.*, l.c., p. 62, pl. iii., fig. 34.

Length of the female 1-3rd of an inch.

Cephalo-thorax tawny yellow. Ocular area black; lateral margins and some oblique converging lines on the sides also black. Clypeus furnished with longish pale yellow hairs. Falces small. Legs strong; first pair strongest, and, with the second, armed beneath the tibiæ and metatarsi with two parallel rows of spines, and of a yellow-brown colour, with a longitudinal row of black spots, sometimes confluent on the upper part of the femora and tibiæ; the first pair also spotted on the sides.

Sternum yellowish, with black marginal border. Abdomen oblong-oval, yellowish-brown, with a longitudinal band on each side of the medial line, formed by large confluent black spots, and converging to their hinder extremities. Sides marked with slightly oblique rows of black spots and streaks. Under side spotted with small black spots, the largest being in the medial line.

The male is somewhat smaller than the female, much darker, and less distinctly marked. The palpi are very remarkable in the size of the digital joint and in the structure of the palpal organs.

The female only of this fine species has been found in Britain. An example of this sex taken by the late Rev. Hamlet Clark on a post by the seashore at Southport, Lancashire, in September, 1855 (and now in my possession), still remains unique as British. I have received both sexes from France, where, however, it is also a very rare spider.

MARPESSA NIGROLIMBATA.

SALTICUS NIGROLIMBATUS, *Cambr. Trans. Linn. Soc.*, xxviii., p. 527, and *Proc. Zool. Soc.*, 1869, p. 452.

Length of the female 1-3rd of an inch; male rather smaller.

Cephalo-thorax black, more or less clothed with short greyish-yellow or whitish pubescence, and with a marginal band of white hairs. Legs moderately long, 1.4.3.2., yellow-brown (those of the first and second pairs darkest), marked and clouded in parts with dark brown.

Palpi (of the male) short, particularly the cubital and radial joints; the humeral, radial, and cubital joints are furnished with white hairs, those on the inner side of the radial longest, and forming a sort of tuft; this last joint is produced on the inner side, and has an oblique direction. Digital joint large, of a somewhat oblong-oval form; at the base, rather on the outer side, is a small conical tooth-like prominence pointing backwards;

palpal organs simple, but prominent, situated far back beneath the digital joint and extending also beneath the radial.

Abdomen, rather elongato-oval, of a dull greyish or yellow-grey hue, bordered laterally on the upper side with a broadish but dull brown band, and with a longitudinal central tapering one of a reddish brown or blackish hue. Sides and under side dull clay-coloured yellow.

The sexes do not differ greatly in colours and markings; but the dark marginal border on the upper side of the abdomen of the female is darker and better defined than in the male, and the central band is rather obsolete, or else forms only a short oblong marking at the fore extremity.

Both sexes were found on a wall at Freshwater, Isle of Wight, and sent to me by Mr. Henry Rogers. I have also received it from St. Helena, and other distant localities. It seems, therefore, to be a very widely-distributed species.

MARPESSA (?) JENYNSII.

SALTICUS JENYNSII, *Blackw.*, l.c., p. 61.

Length of the female 3-10ths of an inch.

Cephalo-thorax prominent in front, projecting beyond the base of the falces; covered with yellowish-brown and black hairs intermixed, and with some long yellowish ones below the front row of eyes. The margins are marked with a black line, and immediately above it (on each side) is a longitudinal yellowish-brown one. Legs strong, 1.4.2.3., especially those of the first two pairs, provided with hairs and strong black spines, of a yellowish-brown colour, with a longitudinal black line along the upper part of the femora, genua, and tibiæ. Abdomen oviform, pointed at the spinners, and densely clothed with short, yellowish-brown hairs, interspersed with long black ones. A faint red-brown line passes from the spinners along the middle of the upper side for more than half its length, and then separates into two diverging branches, which run to its fore extremity, forming a very acute angle; these red-brown lines have an obscure

whitish border, bounded by a faint, red-brown, parallel line; and an obscure whitish line bisects the angular space comprised between the diverging branches of the medial line. On the under side is an obscure, dark, central, longitudinal, tapering band.

Found in Cambridgeshire by the Rev. Leonard Jenyns in 1852.

[I have never seen this spider, which is very probably a *Marpessa*.]

GENUS EUOPHRYS, *C. L. Koch*.

EUOPHRYS ERRATICUS.

ATTUS ERRATICUS, *Walck.*, *Sim.*, *Arachn. de France* III., p. 174.

SALTICUS DISTINCTUS, *Blackw.*, *l.c.*, p. 54, pl. iii., fig. 29.

Length of the male rather less than 1-6th of an inch; female somewhat larger.

The cephalo-thorax slopes abruptly behind, is prominent in front, and projects over the base of the falces. Colour very dark brown, with a line of whitish hairs above the lateral margins. Upper part covered with yellowish brown and whitish hairs, with a short central line of the latter behind the posterior eyes.

Legs 4.3.1.2., pale reddish brown, with brownish black annuli.

Abdomen oviform, brown, clothed with a mixture of yellowish brown, reddish brown, and yellowish white hairs; there are some whitish hairs in front, and some others form a white spot directly above the spinners; in the middle of the fore part are two small obscure yellowish white concentric arcs of circles, following which is a series of angular lines of the same colour. The first two angular lines are longest, and their extremities meet on each side. Sides brown, mixed with yellowish white; and on the under side is a broad, reddish brown, central, longitudinal band.

The male is rather the darkest coloured. Legs 4.1.3.2., first and second pairs, and femora of the others, brownish black.

Cubital and radial joints of the palpi short. Radial apophysis long, pointed, and curved abruptly at its extremity. Digital joint large, oval, very dark brown. Palpal organs prominent, simple in structure, and projecting backwards to the articulation of the radial and cubital joints.

The sexes do not differ much in colours and markings.

Found in North Wales, and North Lancashire under stones on old walls; adult in May and June. I have also received it from the neighbourhood of Exeter.

EUOPHRYS (?) GRACILIS.

SALTICUS GRACILIS, *Blackw.*, l.c. p. 56.

Length of the female, 3-20ths of an inch.

The cephalo-thorax slopes from the middle towards each extremity, and projects a little beyond the base of the falces. It is glossy, very dark brown, with a transverse curved band of intermixed white and yellowish-brown hairs behind the eyes, its extremities extending to a similar transverse band in front. Legs short, 4.3.1.2., yellowish-brown, with black annuli, those at the extremity of the femora and tibiæ being most conspicuous. Palpi short, strong, pale yellow-brownish. Abdomen oviform, pointed behind, and thickly covered with hairs of a very dark brown colour, mixed with scattered yellow-brownish hairs. At the fore extremity is a semi-circular, transverse, yellowish-white band, and on the sides several oblique spots of the same hue; in the middle are two angular yellowish-white lines, the posterior one much the strongest. Under side yellowish-white, with a broad, longitudinal, dark-brown, central band.

Found among heather in woods on the Carnarvonshire and Denbighshire sides of the Valley of the Conway.

[I have not seen this spider, which Mr. Blackwall supposes to be *Salticus gracilis*, Hahn. It is, I imagine, a species of *Euophrys*, and nearly allied to *Euophrys equipes* Cambr., p. 401.]

GENUS HYCTIA, *Sim.*

Differs from *Marpessa* in being of a still narrower and more elongate form. In other respects it is very closely allied to that genus (according to M. Simon, *Arachn. de France* iii., p. 19). The relative length of the genual and tibial joints of the first pair of legs differs constantly in the two genera; in *Marpessa* these are equal, but in *Hyctia* the latter is one half longer than the former. This last may be so in the adults (which I have not seen), but it scarcely holds good in the immature state, at least not to the extent mentioned above. Including *Hyctia xanthogramma*, Bl. (of doubtful genus), two species of this genus are found in Britain, but they have not yet been met with in Dorsetshire.

While the different species of *Marpessa* are for the most part found on walls, rocks, and trunks of trees; those of *Hyctia* appear to be usually found in marshy places.

HYCTIA NIVOYI.

SALTICUS NIVOYI, *Luc.*, *Explor. en. Algérie.*

„ PROMPTUS, *Blackw.*, l.c., p. 59, pl. iii., fig 32.

Length of an immature female rather less than 1-6th of an inch.

Cephalo-thorax tawny yellow. Ocular area black. The margins are black, as are also some converging lines on the sides, and a longitudinal central one on the hinder part. Legs short, rather strong, 4.1.3.2; colour pale yellowish brown, sparsely marked with black. Palpi similar in colour and markings to the legs. Abdomen dull yellowish, marked above and on the sides with curved, transverse, oblique rows of black spots, more or less confluent. The spots on the fore part of the upper side form longitudinal lines.

Sternum yellowish, with a black marginal border.

A single example was found near Northampton many years

ago, and another more recently in Wicken Fen, Cambridgeshire. The former example has been examined by M. Simon, who tells me that it is identical with *Hyctia nivoyi*, Luc.

HYCTIA (?) XANTHOGRAMMA.

SALTICUS XANTHOGRAMMA, *Blackw.*, l.c., p. 51.

This spider is only known from the very short description quoted by Mr. Blackwall (l.c.) from "Martin Lister" (*Hist. Animal Angl. De Aran.*, p. 90). The following are the most important points of this description:—Of medium size, mostly yellowish. Cephalo-thorax large, nearly quadrate, very flat, broadest in front. Eyes emerald green. Abdomen subcylindrical, pointed behind, with three conspicuous saffron-coloured streaks in the medial line of the upper side; under part whitish. First pair of legs robust, hairy, and longer than the rest; third pair shortest; digital joints tumid and much like the falces, which are reddish black.

No locality is given for this spider, which is evidently of a very distinct species, and probably of the genus *Hyctia*, Sim.

GENUS PHILÆUS, *Thor.*

The cephalo-thorax in this genus is very elevated, the thoracic portion dilated, and at least one half longer than the caput, the upper part of which is level or slightly convex. Falces strong, long, and often a little divergent in the males. Legs in the male 1.2.4.3., in the female 4.1.3.2.; those of first pair strongest.

The difference in form, colours, and markings between the sexes in this genus is extraordinary. The greater number of the species are exotic; one only claims to be British.

The activity of the male is very great, leaping on the face of rocks or among heaps of stones, &c., to an almost inconceivable extent.

PHILÆUS CHRYSOPS.

ARANEA CHRYSOPS, *Poda*, Ins. Mus. Græc., p. 123.

ARANEA SANGUINOLENTA, *Linn.*, Syst. Nat. Ed. 12, I. ii., p. 1032.

SALTICUS SANGUINOLENTUS, *Walck.*, *Cambr.*, Trans. Linn. Soc. xxviii.,
p. 433. *Hahn u. Koch*, Die Arachn.,
p. 51., pl. 14, fig. 39.

DENDRYPHANTES XANTHOMELAS, *C. L. Koch*, Die Arachn., p. 85,
tab. 446, fig. 1148.

„ DORSATUS, *Id.*, l.c., p. 84, fig. 1147.

„ LEUCOMELAS, *Id.*, l.c., p. 88, fig. 1150.

„ NIGRICEPS, *Simon*, Arachn. de France iii., p. 47.

Length of the male 4 lines ; female somewhat larger.

The cephalo-thorax of the male is black, clothed with long black hairs, and with white hairs above the falces and behind the two large central eyes ; two small, short stripes of white hairs running backwards from each of the two posterior eyes.

Legs clothed with long hairs, and armed with spines beneath the tibiæ and metatarsi, and also on the upper side of the metatarsi of the third and fourth pairs ; femora deep blackish brown ; the rest of the first and second pairs reddish brown, clouded with deep blackish brown. The metatarsi of the third, and the tibiæ and metatarsi of the fourth pair are more distinctly annulated with reddish yellow-brown and black-brown ; all the tarsi end with a strong claw tuft. Palpi black, or black-brown, clothed with longish white and other hairs. At the outer extremity of the radial joint is a moderately-sized, tapering, pointed apophysis. Digital joint long, narrow, and of a bent form. Palpal organs simple ; they extend considerably backwards and outwards in a strong, obtuse-pointed, somewhat bent prominence, almost in contact with the radial apophysis, and are encircled on the inner side by a long, slender, prominently-curved, black spine, which reaches to the extremity of the digital joint.

Abdomen black, clothed densely all over with short squamose hairs varying from bright rust-red to scarlet in some examples, and leaving a central, longitudinal, somewhat lanceolate black stripe on the upper side.

The cephalo-thorax of the female is black, sparingly covered with long white hairs, most densely before, and behind, where they form a very broad border, and also in the middle forming two converging bands behind the posterior eyes.

Legs black, with white hairs; tarsi and metatarsi of a clearer colour and annulated. Abdomen black, covered with a dense white, yellow, or reddish grey pubescence; on the upper side is a longitudinal, central, tapering, black band, sometimes assuming an oval, sinuously-edged marking, occasionally emitting some lateral ramifications.

The above description of the male is from examples found by myself near Trieste, and the Lago Maggiore; that of the female being taken from M. Simon's "*Arachnides de France*."

Its claim to be accounted a British spider rests on the authority of the late Dr. Leach (*Edinb. Encyclop.* vii., p.458). No locality is given, and it must at any rate be an exceedingly rare species in Britain, although not rare in many parts of continental Europe. It is rare in the North of France, but very common in the South. The striking contrast of the black and white cephalo-thorax, and scarlet and black abdomen of the male, render it a very handsome and conspicuous spider when sunning itself on old walls, rocks, and heaps of stones.

GENUS ATTUS, *Walek*.

ATTUS CARICIS.

ATTUS CARICIS, *Westr.*, Aran. Suec. p. 576.

SALTICUS CARICIS, *Cambr.*, Trans. Linn. Soc. xxviii., p. 435.

Length of both male and female; 1 $\frac{3}{4}$ rd line.

Cephalo-thorax red-brown; ocular area black; clothed with yellowish, grey, and brown hairs. Hinder slope very abrupt.

Legs 1.4.2.3., or 4.1.2.3., reddish yellow-brown, those of the first pair strongest, brightest, and darkest coloured.

Palpi short, strong, roddish yellow-brown; cubital and radial joints short, clothed with whitish hairs, the radial much the shortest, and with a comparatively longish pointed apophysis at its outer extremity; digital joint moderate in size, clothed with dark yellowish and brown hairs; palpal organs simple in structure; abdomen blackish yellow-brown, clothed with dull yellowish and brown hairs; on the hinder part of the upper side is a series of slightly angular, or curved, pale reddish yellow-brown lines; under side dull yellow-brown.

The female resembles the male in colour and markings.

Both sexes were found on rushes in a marshy spot near Merton Hall, Norfolk, and sent to me by Lord Walsingham.

This little spider appears to me to be identical with *Attus caricis*, Westr., but not so with *Attus atellanus*, Simon, which species this latter author considers to be identical with the *Attus caricis* of Westring.

ATTUS FLORICOLA.

EUOPHRYS FLORICOLA, *C. L. Koch*, die Arachn. xiv., p. 39, Taf. 473, fig. 1301.

SALTICUS FLORICOLA, *C. L. Koch*, *Cambr.*, Trans. Linn. Soc. xxviii., p. 528.

Length of the male 2 lines; female rather larger.

Nearly allied to *Attus saltator* (p. 410, pl. v., fig. 7), which it also resembles very closely in colours and pattern. It may be, however, easily distinguished by its much larger size, the blacker hue of the dark parts of the upper side of the abdomen, and the smaller size (as well as the more curvi-linear form) of the two large white spots towards its hinder part. In *Attus saltator* these spots are round. The cephalo-thorax also, as well as the sides of the abdomen, are much less densely clothed with white hairs.

Examples of both sexes, both young and adult, were found among stunted herbage, and among the pebbles on the shore, even

below high water mark, between Brighton and Shoreham, in June, 1871. It is a very active and pretty spider, and would hardly fail to be met with in some of the suitable localities round our Southern coasts.

GENUS HASARIUS, *Simon*.

HASARIUS ARCUATUS.

ARANEUS ARCUATUS, *Clk.*, Sv. Spindl., p. 125, pl. 6, tab. 1.

ARANEA GROSSIPES, *De Geer.*, Mém. vii., p. 290, pl. 17, fig. 11-14.

SALTICUS GROSSIPES, *Cambr.*, Zoologist 1861, p. 7557, and Trans. Linn. Soc. xxviii., p. 434.

Length of the male about $2\frac{1}{2}$ lines.

Cephalo-thorax deep black-brown; ocular area black; clothed with dull yellowish-red pubescence, and with some white hairs in front and between the eyes of the first row. Hinder slope of the thorax very abrupt.

Legs very strong, especially those of the first pair; of a deep black-brown, or black colour; tarsi and metatarsi reddish yellow-brown, the latter with a black annulus at its fore extremity.

Palpi short, strong, black; radial apophysis as long as the joint; strong, and somewhat obtusely pointed at its extremity. Digital joint rather large, oval; palpal organs large and prominent but simple in structure.

Abdomen short, oval, black, thickly covered above and on the sides with somewhat golden-coppery hairs, and rather paler ones underneath.

The sexes do not appear to differ much in colours. This spider may be easily distinguished from other British species, not only by its colours, but by its short robust form.

Found (the male only) among rushes in a swamp on the Heath, near Lyndhurst, Hants, and also subsequently near Wokingham, but apparently very rare.

HASARIUS ADANSONII.

HASARIUS ADANSONII, *Savigny, Sim., Arachn. de France*, p. 79.

SALTICUS CITUS, *Cambr., Zoologist* 1869, p. 8461. *Ann. and Mag.*, N. H. 1878, ser. 5, vol. 1, p. 127.

Length of the male 1-4th of an inch.

Cephalo-thorax deep reddish-brown; ocular area black, surrounded by a curved band of white hairs, on a paler reddish-brown ground, the convexity of the curve directed backwards.

Legs rather long, 4.1.3.2. not so strong as those of *Hasarius arcuatus*, Clk.; of a deep reddish black-brown colour; tarsi paler.

Palpi rather long, slender, of a dark reddish-brown hue, with a strong fringe of long white hairs at the fore extremity of the humeral joint, and along the front (on the inner side) of the cubital and radial joints; the radial has a very small apophysis at its fore extremity. The digital joint is very small and narrow, scarcely broader than the radial joint; the palpal organs are simple.

Abdomen short-oval; black or black-brown above, with a broad, central, longitudinal, reddish or brownish-red band. A crescent of white hairs surrounds the fore extremity, and on the hinder half is a large quadrangle formed by spots of white hairs, of which the two anterior ones are the largest and widest apart. Sides dark yellowish-brown, so thickly striated and spotted with black, as to look almost black in some examples; under side dark yellow-brown, or blackish brown, with four paler obscure longitudinal stripes converging towards the spinners, which are black, tipped with yellowish-white.

The female is larger, and of a duller, browner hue than the male.

Three males have been found in England. One in a Conservatory at Burnham, near Bridgwater, another in the Herbarium at the British Museum, London, and the third in an orchid-house in the Botanic Gardens at Kew. It is, perhaps, only an accidentally imported species in this country, though

found in France, Spain, and North Africa, and widely distributed also in various exotic regions. The male is a very striking-looking, elegant, and active spider.

HASARIUS NOTATUS.

SALTICUS NOTATUS, *Blackw.*, l.c., p. 58.

Length of the female 1-4th of an inch.

Cephalo-thorax prominent in front, projecting beyond the base of the falces, and sloping abruptly in the posterior region. Colour brown-black, sparingly clothed with black and whitish hairs.

Legs strong, 4.1.3.2., furnished with hairs and spines; pale yellow, with a black spot on the upper side of the coxæ of the posterior pair.

Palpi similar in colour to the legs.

Abdomen oviform, pointed at the hinder extremity; brown-black, thinly clothed with short whitish hairs, and with a pale, yellowish-brown, central, longitudinal band, broader behind than in front; an obscure narrow band of whitish hairs curving round the fore part, and prolonged on the sides nearly to the spinners.

Found by the late Mr. F. Walker, among herbage in a wood at Southgate, in June, 1850.

[I have never seen this spider, which may perhaps belong to the genus *Hasarius*.]

GENUS *SALTICUS*. *Salticus*, *Sim.*, and *Latr.* (in part).

The spiders belonging to this restricted genus are remarkable for their elongated ant-like form; the abdomen is elongate, and joined to the cephalo-thorax by a distinct pedicle; the cephalo-thorax is also elongate, and strongly constricted behind the caput at the beginning of the thoracic part. The falces (of the male) are very long, directed longitudinally forwards, and armed with a fang of corresponding dimensions.

One species only has been met with in Great Britain, and that one is of great rarity.

SALTICUS FORMICARIUS.

ATTUS FORMICARIUS, *Walck., Blackw.*, l.c., p. 64, pl. iii., fig. 36.

SALTICUS FORMICARIUS, *Cambr.*, Trans. Linn. Soc. xxviii., p. 435,
and Ann. and Mag. N. H. 54, vol. 16,
p. 259.

Length of the male (to the base of the falces) rather over $2\frac{1}{2}$ lines; to the extremity of the falces $3\frac{3}{4}$. Female 3 lines to the base of falces.

Cephalo-thorax (of the male) yellowish red-brown; caput rather elevated, flat at the top, black, thinly clothed with greyish-yellow hairs, and strongly constricted on each side below the occiput.

Legs moderately long, slender, 4.1.2.3, armed with long strong spines beneath the tibiæ and metatarsi; colour yellow, tinged with reddish brown; the fore half of the femora of the first pair blackish, with violet metallic reflections, and the metatarsi of the same pair are also blackish; the genua of the fourth pair are marked with blackish red-brown, and the tibiæ of the third pair have a longitudinal, dark, black-brown, slightly oblique line on the outer side. Falces as long as the cephalo-thorax, of a slightly curved form, projected horizontally, flat, sharp edged, and regulosely striated above in a transverse direction, of a dark reddish brown colour, with metallic reflections, and armed with strong teeth on their inner edge. Fang long, strong, with a strong prominence on its inner side.

Palpi short, dark yellow-brown; radial stronger than the cubital joint, and a little produced at its extremity on the outer side, digital joint rather large, oblong-oval, and flattened; palpal organs neither prominent nor complex.

Abdomen oblong-oval; fore half yellow-brown, reddish at the anterior extremity, and with a large oblique whitish yellow band on each side near the middle; this band is edged both before and behind with a shorter and somewhat diffused blackish patch, and is continued along the under side to the spinners. The hinde

half is deep black-brown above, and dull blackish on the sides, with a short curved, oblique, pale patch or bar on each side near the spinners. The under side has a dull, yellow-brown, longitudinal central band.

The female nearly resembles the male in colours and markings, excepting that the tibiae of the third and fourth pairs and the femora of the second pair of legs have a longitudinal blackish stripe, the former on the outer side, the latter on the inner side near the front. The metatarsi of the first pair are black, and the femora suffused with blackish. The palpi are red-brown and black; the radial and digital joints large, flattened and fringed with long hairs. The falces project obliquely, but not longitudinally, and are only of ordinary length.

Found in Scotland, on the authority of the late Dr. Leach (Encyclop. Brit. Supplem. to 4th, 5th, and 6th Ed. Art. Annulosa). An example (now in the British Museum) has been met with at Southend by Mr. C. Waterhouse, and one was taken by the late J. C. Dale, Esq., of Glanvilles Wootton, at the Salterns, near Lymington, Hampshire, in August, 1865.

The examples from which the above description has been made were sent to me by M. Simon from France, where it is generally distributed and not rare.





APPENDIX, C.

Additional Notes on some of the Dorset Spiders described in the earlier part of the work, with rectifications of Synonyms; and also some further observations on the senses, habits, and economy of Spiders in general.

GENUS DRASSUS.

DRASSUS BRACCATUS, *L. Koch*, Die. Arachn. Fam. der Drassidon, p. 97, Taf. iv., fig. 63.

„ BULBIFER, *Cambr.* (p. 18).

I was not aware until very lately that the spider described by myself as *Drassus bulbifer* had then recently been described from German specimens by Dr. L. Koch, l.c.

GENUS AGROECA (p. 34).

On a careful examination and comparison of the different species of *Agröeca* and *Liocranum* (*L. Koch*, *Cambr.*, p. 87). I feel no doubt but that Mons. Simon is right (*Arachn. de. France*, tom. iv., pp. 288—311) in limiting the latter genus to *L. domesticum*, Wid. The other species included (pp. 39-41) in that genus being congeneric with *Agröeca brunnea*, Bl., and *A. proxima*, *Cambr.* The British representatives therefore of *Agröeca* at present known are (in addition to the two species above mentioned) *A. gracilipes*, Bl. p. 39, *A. celer*, *Cambr.*, (p. 40), and

A. celans, Bl. (p. 41), all three having been hitherto included in *Liocranum*.

GENUS MICARIA.

MICARIA SCINTILLANS, *Cambr.* (p. 12).

This spider has been met with in France by M. Eugène Simon. It is not therefore peculiar, as I had believed, to the Isle of Portland.

GENUS AMAUROBIUS.

AMAUROBIUS SIMILIS, *Bl.* (p. 54).

Since the publication of Part I. I am informed by Mons. Eugène Simon that this species (which I had believed to be peculiar to England), is found abundantly both in France and Belgium.

GENUS LETHIA.

LETHIA ALBISPIRACULIS, *Cambr.* (p. 53).

On the 6th of June, 1879, I met with adults of both sexes of this little spider, under stones, in the same part of the Isle of Portland as that where the females alone were found in June, 1875. The male resembles the female in general appearance and colours, it is however rather darker, and the spiracular plates (in all the examples found) were wanting in the shining white appearance noted in the females found in 1875. This character, though observable in most of the females met with does not seem to be invariable. *Lethia albispiraculis* is closely allied to, but distinct from *L. subniger*, *Cambr.*; the cephalo-thorax in the latter species being rather shorter and proportionately broader than in the present spider.

GENUS CRYPHOECA.

CRYPHOECA MOERENS, *Cambr.* (p. 59).

In April last (1879) I was fortunate enough to find on the iron railings of the Rectory Lawn, Bloxworth, an adult female of thi

rare spider, of which the type (in a very young state) was found in the same locality as long ago as May, 1862. The adult example now met with conclusively proves the goodness of the species, and that it is a *Cryphoea*, allied to *C. silvicola*, Hahn., but smaller, and different not only in colours and markings, but in the structure of the genital aperture. The central eyes of the hinder row are also rather further apart than each is from the lateral eye on its side, while in *C. Silvicola* the intervals between the eyes of the hinder row are as nearly as possible equal. The length of the adult female is barely over one line, while the female of *C. silvicola* measures $1\frac{1}{2}$ to $1\frac{3}{4}$ lines.

It is stated (l.c. supra) that the inferior spinners in the type specimen are longer than the superior pair. This is not borne out by an examination of the adult female. I conclude that the extra length observed in the very young type specimen may have arisen from some accidental elongation; this occasionally happens in regard to the spinners of other spiders when preserved in spirit of wine.

GENUS SOYTODES, Latr (p. 74).

By an inadvertance the relative length of the legs in this genus is stated to be 4.1.2.3., whereas it should be 1.4.2.3. It should also be mentioned that the terminal tarsal claws spring from a distinct, supernumerary claw joint.

GENUS THERIDIOSOMA.

THERIDIOSOMA ARGENTEOLUM, Cambr. (p. 428).

Since the description of this spider was in print (l.c.), I have met with numerous examples of both sexes in the adult stato, among grass, heather, and *débris*, in a damp spot on Bloxworth Heath (May 26th, 1880). The male resembles the female (described l.c.) both in its form, and in the character of its markings, but the darker portions are of a much deeper hue, often black-brown to quite black, causing the silvery markings to appear more conspicuously.

The palpi are short and slender, excepting the digital joint and palpal bulb, which are of inordinate size; the palpal organs are not very complex, but are enormously large, smooth, dull brownish, consisting of a somewhat globular, corneous bulb, underneath which, towards the extremity, is a smaller but strong dark process, whose prominent point projects outwardly. The convex sides of the digital joint in this (as in many others of this family) are turned towards each other. The colours of some of the more recent females found are also much darker than those of the type specimen described at p. 428.

This curious little spider is exceedingly closely allied to *Theridion gemmosum*, L. Koch, but not being yet satisfied of the identity of the two, I have thought it best at present to keep them separate. The disparity in the length of the footstalk attached to the different cocoons is noticed (p. 430). In some other examples found since, this footstalk measures as little as 2 lines in length.

GENUS EURYOPIS.

EURYOPIS CORACINA, C. L. Koch.

STEATODA CORACINA (p. 98).

This spider is placed inadvertently (l.e.) in the genus *Steatoda*. It should have come into the Genus *Euryopsis* (p. 99). With regard to the generic characters of *Euryopsis*, it may be added here that the cephalo-thorax is not only very short but very high in front, owing to the great height of the clypeus. The ordinary grooves and indentations marking the division of the caput and thoracic segments are almost, and in some cases quite, obsolete. The shortness of the palpi noted (p. 100) as a distinguishing character of *Euryopsis* does not (on further observations) appear to hold good in all the species. Since the description at p. 98 was written I have met with several other examples of *E. coracina* on Bloxworth Heath during the summer of 1879.

GENUS NERIENE, *Bl.*

NERIENE FUSCA, *Blackw.*

„ FUSCA, *Bl.*, l.c., p. 275, pl. xix., fig. 189, and pl. xxii.,
fig. E.

„ AGRESTIS, *Cambr.*, ante p. 115, excluding reference to
Spid. Gt. Brit. and Irel., p. 276.

„ AGRESTIS, *Blackw.*, l.c., pl. xix., fig. 190, and pl. xxii.,
fig. D.

The confusion hitherto existing between this spider and the true *Neriene agrestis*, *Blackw.*, appears to be now satisfactorily cleared up by the example of this latter recorded at p. 486, and kindly sent to me by Mr F. M. Campbell, from Hoddesdon, Hertfordshire.

NERIENE INNOTABILIS, *Cambr.* (p. 131).

I have lately (July 1, 1880), for the first time, met with an adult female of this spider. It is larger than the male, but resembles that sex in colours and other general characters. The abdomen is very convex above, and projects considerably over the base of the cephalo-thorax; it is of a deep shining yellowish-brown colour, palest on the upper side, and with a dull whitish blotch immediately above the spinners. Connected with the genital aperture is an exceedingly strong vertical process, whose length is a little less than its width. The palpi are short, but the digital joint is not tumid, though in some other respects this spider is much like *Neriene anomala*, *Cambr.*, which last may possibly be the female sex of *Neriene subtilis*, *Ibid.*

The example above described was found (with the male) on the trunk of a fir tree at Bloxworth.

NERIENE CONIGERA, *Cambr.* (p. 132).

Towards the end of May, 1880, I found several adult examples of both sexes of this rare spider at the roots of heather and under old turves on Bloxworth Heath.

The genital process of the female is strong and prominent.

NERIENE PHOLCOMMIDES, *Cambr.*

LINYPHIA PHOLCOMMIDES, *Cambr.* (p. 212).

During the past summer (1880) I have met with two adult examples of each sex of this spider, which I had (l.c.) described as a *Linyphia*. A careful examination, however, of the fresh, and much better conditioned examples, leads me to remove it into the genus *Neriene*, in spite of its legs being armed with distinct, though slender, spines.

The examples now recorded were found on the ground under shelter of short herbage; their mode of running is peculiar (though similar to that of many others of the genus *Neriene*), and swift; the body is kept quite flat and close to the surface of the ground, giving the spider a creeping appearance, quite different from that of any *Linyphia* I have ever observed.

The female closely resembles the male in colour and general characters, though the thorax, at the top of the posterior slope, is of an even more sub-conical form than that of the male, and gives the cephalo-thorax a very fair resemblance to a limpet shell. The abdomen of the female is larger and projects more over the base of the cephalo-thorax than that of the male. The genital process is of rather large size and prominent.

From the fresh examples met with I have been able to make a more satisfactory examination of the eyes, and I now conclude that the interval between those of the hind-central pair is more nearly equal to an eye's diameter, being rather larger than I had before believed it to be. The height of the clypeus also appears to equal nearly half that of the facial space.

NERIENE DILUTA, *Cambr.* (p. 437).

„ DEMISSA, *Cambr.* (p. 438).

Recent observations lead me to believe that the two spiders above named are of the same species. The long slender process connected with the genital aperture of *Neriene demissa* was overlooked in the female of *Neriene diluta* owing to the latter having

so very recently attained maturity, and the characteristic process being, therefore, almost concealed. Several females with this process very distinctly visible have been met with since *Nerience demissa* was described (l.c.).

NERIENE HERBIGRADA, *Bl.* (p. 113).

„ EXHILARANS, *Cambr., Ann. and Mag., Nat. Hist., ser.*
5, vol. 4, p. 199, pl. xii., fig. 3.

Monsieur Simon has lately called my attention to the probable identity of the two spiders above named. In describing *Nerience exhilarans*, I was unable to compare it with *Nerience herbigrada*, *Bl.*, owing to my examples of this latter spider having been mislaid; and relying upon the absence, in Mr. Blackwall's description, of any notice of some very characteristic tubercles on the maxillæ of the male, I had come to the conclusion that these two spiders were distinct from each other. I have now, however, found the types of *Nerience herbigrada*, and, on a careful comparison, their identity with *Nerience exhilarans* is placed beyond all doubt; this latter name, therefore sinks into a synonym of Mr. Blackwall's species.

I would add to the short description given, at p. 113, of this spider, that the occiput is slightly gibbous, and the whole surface of the cephalo-thorax, which is of a deep, rich, brown colour, is very finely and thinly punctuose; also, on the inner side of the indentation behind each lateral pair of eyes is a distinct black triangular spot. In some examples the abdomen is of a pale yellowish-brown hue. The genital aperture of the female is simple, and of a roundish-oval form; and the radial apophysis of the male palpus is of a slightly tapering shape, curved, and obtusely pointed.

I have met with numerous examples of both sexes of this spider among moss in the neighbourhood of Bloxworth during the spring of 1880.

GENUS WALCKENAERA, Bl.

WALCKENAERA FLAVIPES, Bl. (p. 159).

„ IMPLANA, Cambr. (p. 162).

During the past summer (1879) I have met with fresh examples of *Walckenaera implana*, Cambr., and am now satisfied that it is identical with the spider named for me many years ago by Mr. Blackwall, *Walckenaera flavipes*, Bl.

WALCKENAERA CRASSICEPS, Westr., Cambr. (p. 151).

„ AFFINITATA, Cambr. (p. 150).

I have recently had an opportunity of comparing the types of the above two species with a fresh example of what I believe to be *Walckenaera crassiceps* (Westr.) received from Germany, and with a drawing of *Erigone crassiceps*, Westr., kindly made for me by Dr. Thorell from Westring's type specimen, and I am compelled to conclude that they are all of the same species. The specific name *crassiceps* has priority, having been conferred by M. Westring some little time previous to the description of the spider by myself as *Walckenaera affinitata*. The less apparent gibbosity of the occiput in the type of *Walckenaera affinitata* was evidently occasioned by an accidental injury; in all other respects the specific characteristics of the two spiders (pp. 150, 151) are precisely similar.

WALCKENAERA HIEMALIS, Bl. (p. 160).

„ SIMILIS, Cambr., Proc. Zool. Soc., 1872, p. 761,
pl. xlv., fig. 18.

A careful comparison with each other of fresh and more perfect examples of the above two spiders proves that they are undoubtedly identical species. Mr. Blackwall's name has priority, having been conferred many years ago.

WALCKENAERA SAXICOLA, *Cambr.* (p. 145).

The type specimens of this rare spider having been accidentally destroyed some years ago, I was pleased to meet with both sexes at the roots of heather on Bloxworth Heath, on the 12th of June, 1880.

GENUS LINYPHIA, *Latr.*

LINYPHIA ABNORMIS, *Blackw.* (p. 207).

„ LINGUATA, *Cambr.* (p. 207), exclude description in footnote to p. 208.(*)

During the past and present months (September and October, 1879) the above spiders have occurred here under circumstances which convince me, greatly to my surprise, that they constitute the sexes of the same species. The only males of *Linyphia abnormis* which I had previously met with had too recently moulted for the abdominal pattern to be visible, and Mr. Blackwall in his description of this spider does not mention this character in either sex, nor does he clearly describe the very remarkable genital process of the female. At p. 208 (*supra*) in a footnote (*) an adult male spider received from Scotland is described as (believed at the time to be) the male of *Linyphia linguata*; this, however, is certainly not the case, the spider there described being probably a recently adult example of *Neriene rufa*, *Westr.* (p. 123).

The examples lately found of *Linyphia abnormis* and *Linyphia linguata* prove that the abdominal pattern (described p. 207) is visible, and equally well marked, in both sexes.

LINYPHIA IMPIGRA, *Cambr.* (p. 221).

„ CIRCUMCINCTA, *Cambr.* (p. 191).

On the 7th and 19th of May, 1880, I met with numerous adult and immature females of *Linyphia circumcincta* in the same locality as that in which the types of this species were found in May, 1860; and also, in company with them, adult and

immature males, exactly corresponding with the females in size, colours, and markings. On comparing these adult males with the types of *Linyphia impigra* (of which numerous adults were also lately found, on the occasions mentioned above), I find a perfect identity in general form and structure, and especially in the structure of the palpi and palpal organs. In spite, therefore, of the striking difference in colour and markings, I have not the least doubt but that they are of the same species (differing only in the length of time elapsed since they came to maturity), and both identical with the females found now as well as in 1860. We have other instances of the male spider resembling the female when first attaining the adult state, but soon afterwards assuming a deeper hue and losing all, or nearly all, the characteristic markings. *Vide* descriptions of *Linyphia pusilla* (p. 231), *L. clathrata* (p. 222), and *L. hortensis* (p. 230). *Linyphia circumcincta* is nearly allied to *Linyphia pusilla*, Sund., but may be easily distinguished from it (in the female sex) by the uniformly dark under side of the abdomen of the latter, and the differently marked cephalothorax, while in the male the long curved slender spine connected with the palpal organs, though much resembling that of *Linyphia pusilla* is not nearly so long, and forms a much less prominent and not so extended a circle. Its colours also are paler, but clearer and brighter than those of *Linyphia pusilla*.

LINYPHIA OBSCURA, Bl. (p. 188).

On the 7th of July, 1880, I met with numerous examples of both sexes of this spider on the trunks of larch trees at Bloxworth. Several of these spiders (as well as some others—*Linyphia zebrina*, Menge), but all females, had the apodous larva mentioned in the *Introduction* (p. xxxii.), adhering to the abdomen. As these larvæ, from their size (some exceeding that of the spider's abdomen) appeared to be nearly fully-grown, I determined to try once more to rear the perfect insect, and so placed them in a glass cylinder, where, after two or three days, I had the satisfaction of seeing them leave their hold upon their victim, and, enclosing themselves in a small shuttle-shaped

silken cocoon, suspended in the spider's web, change to the pupa state. From the pupæ (six in number) there emerged, not many days afterwards, six small hymenopterous insects. The spiders shrivelled up and died immediately after they became freed from their parasitic enemies. Many previous attempts to rear the perfect insect had failed.

Dr. Capron, of Shere, near Guildford (to whom I forwarded examples of the parasite), tells me that he believes it to be *Acrodactyla De Geerii*, Haliday.

GENUS ERO, C. L. Koch.

ERO TUBERCULATA, *De Geer* (p. 235).

By an oversight *Ero atomaria*, C. L. Koch, is included (*l.c.*) as a synonym of this species; the synonymic reference was intended to have been made to *Ero tuberculata*, C. L. Koch, *Die Arachn.*, vol. xii., p. 107, pl. 420, fig. 1,034. *Ero atomaria*, C. L. Koch, has not yet been found in Great Britain.

GENUS ULOBORUS, *Walck.*

ULOBORUS WALCKENAERIUS (p. 285), pl. vi., fig. 2.

A fine and well marked example of the adult male of this rare spider, sent to me by the Rev. C. W. Penny from near Wokingham several years ago (but mislaid until very lately), induces me to add now a short note upon it. It differs from the female in the longer and stronger legs of the first pair, which have a longitudinal row of short, strong spines (articulated to minute tubercular eminences) along the inner side of the tibiæ. The abdomen is longer, narrower, and less convex above than in the female. The three longitudinal dark-brown stripes are more distinctly traceable on the upper side of the abdomen, but the central stripe has its hinder part broken by two or three short angular bars or chevrons, and the lateral ones are also strongly dentated on the inner side of the posterior half. This gives the upper side of the abdomen quite a different appearance from

that of the female, in which the longitudinal stripes are very slender, and not nearly so distinct. The cephalo-thorax also of the male is rather broader, in proportion to its length, than that of the female.

GENUS SINGA, *C. L. Koch*.

SINGA SANGUINEA, *C. L. Koch* (p. 251).

A fine example of the adult male, found on Bloxworth Heath, on the 26th of May, 1880, enables me to make one or two corrections and additions to the description given (l.c.) of the palpi and legs.

The cubital joint of the palpus has two long, strong, prominent spine-like bristles issuing from its upper side, not, as mentioned (l.c.), one bristle from each of the radial and cubital joints. The palpal organs also have in front of, and underneath the strong, pointed, curved process mentioned (which is black-brown and spine-like), a kind of duplex, prominent corneous process of a paler colour; and behind this process there is a prominent, slender, somewhat sinuous, black spine.

The tibiæ and femora of the legs are armed with a few spines; those on the tibiæ of the first pair (which are slightly incrassated and bent inwards) being the strongest.

The whole spider is of a darker and richer colour than the example received from Wokingham.





SOME ADDITIONAL REMARKS ON THE SENSES, HABITS, AND ECONOMY OF SPIDERS.

SENSES OF SPIDERS.

The absence in the "*Introduction*" of any special reference to some of the "Senses of Spiders" having been noticed by a friendly critic, I will not pass it over quite in silence, though very little is really known in reference to this part of the study of Arachnids.

SIGHT.

Spiders undoubtedly possess the sense of *sight* in a very strong degree; but within what limits of distance, or with what magnifying power, we have, so far as I know, very little proof either from observation or anatomy. It is probable that many spiders see best with a diminished light, and Mons. Eugène Simon attributes different powers of vision to the different eyes. He believes (as already noticed in the "*Introduction*") that some (those of a dark colour) are endowed with power to see best in daylight, while those of a white or pearly hue he considers to be intended for use at night, whence he calls the former *les yeux diurnes*, and the latter *les yeux nocturnes*. Most spiders possess eyes of both these kinds, but whether the respective powers thus attributed to them are really possessed can scarcely be said to be yet proved. A subject of much interest is here open to observers out of doors, as well as to skilful insect-anatomists. It would also be a point of great importance to ascertain, by careful anatomy, the defects of structure probably existing in some of the eyes of many spiders, notably in those of the South European genus *Æcobius* (Lucas); these apparently defective eyes, instead of being convex and having the look of perfect visual organs, have every appearance of abortion or atrophy, being misshapen, flattened, and often like a

more pearly scale on the surface of the caput (*Introduction* p. vii.). The immovability of the eyes of spiders is also noticed at p. vii. (*Introduction*); the varied direction of their visual axis being supposed to compensate for want of power to turn the eyes themselves one way or another. A skilful microscopic observer, however, of my acquaintance, in correspondence several years ago, stated that he believed *some* spiders, at least, possessed a power to direct their vision by a perceptible and voluntary internal movement of the eye. A movement of this kind was noticed in the eyes of a living example of *Atypus piceus* (Sulz.). My own idea is that there is no such inward movement of any portion of the eye; the apparent movement being probably caused by the play of light upon some portion of its internal anatomy. I have very recently observed this movement in the two large anterior eyes of an example of *Aelurops V-insignitus*, Walck., several days after immersion in spirit of wine, showing that it could not possibly be occasioned by any voluntary inward movement of the eye itself.

TOUCH AND HEARING.

The *sense of touch*, or feeling, is no doubt much assisted by the hairy armature of the legs, palpi, and other parts. It is also probably through these hairs that the *sense of hearing* is principally exercised. It is certain that spiders are very sensibly affected by sound, though we may not, perhaps, be inclined to credit them with the power of discriminating and enjoying musical sounds which has been attributed to them (*Walck.*, Ins. Apt. 1, p. 110). An experiment like the following, and one easily made, strikingly proves the excessive sensibility of spiders to sound. In the month of September, 1879, I was standing a few feet off from a female of *Epeira diademata* sitting in the centre of its snare, my son Bertie being at a little distance. Having occasion to call to him (in not a very loud voice), I observed a distinct kind of start and tremulous movement in the spider. Repeating my call in a louder tone, the starting and convulsive trembling of the spider were repeated in a more intense degree. We then

tried the same experiment upon several other spiders of the same species, standing sometimes within five or six feet of the snare, and sometimes at a distance of ten feet, but always with the same effect. Thinking that this effect might be perhaps due to the strength of the vibrations of air, caused by the loud tones of our voices being *directed towards* the spider, I then turned round and faced in an exactly opposite direction, shouting out loudly, while my son watched the spider. The effect in this case was almost as great as before. We then repeated the experiment on various other examples of this spider, each of us alternately watching and shouting, and in every instance the effect was instantaneous and equally striking.

TASTE.

Spiders have most probably a strong *sense of taste*, and without a doubt this is seated in the *tongue*, a membranous organ briefly noticed at p. xii. (*Introduction*).

DEGLUTITION.

Although the small size of the œsophageal tube in spiders entirely prevents the passage of anything otherwise than in a fluid state, yet they have sometimes been observed to consume more or less solid substances. This is probably effected by the emission of some solvent liquid from the mouth, by means of which, combined with the action of the *falces* and *maxillæ*, the solids are reduced to a pulpy fluid. Most likely the solvent is secreted in the bulbous-shaped termination of a tube which leads downwards from the base of the *tongue*.

PAIN.

With respect to the *sense of pain*, there seems no reason to believe that spiders are more susceptible than any others of the *Articulata*, in all of which any *sense of *acute pain* is probably almost, or altogether, wanting.

*Of course, in discussing this question much would turn upon the definition of *pain*. I would define *pain* to be *unpleasant sensations, caused by an impediment being offered to the exercise of a natural function*. This would, of course, include those sensations experienced when the functions are disturbed by disease, as well as by any external violence.

POWER TO UTTER SOUNDS.

At p. 97, in describing the abdomen of *Steatoda bipunctata*, and also at (p. 101-2), that of *Asagena phalerata*, an apparatus is mentioned as enabling the spider to emit sounds by means of the friction of two serrated or roughened surfaces against each other. Other spiders of the same † genus are furnished with a somewhat similar apparatus; but I am not aware that sounds have been heard in any instance excepting that of *A. phalerata*. The apparatus in these cases is either confined to the male, or is imperfectly developed in the spider. A stridulating apparatus has also been found in a large Indian spider of the family *Theraphosides*—*Mygale stridulans*, Wood-Mason. A loud squeaking sound is emitted by this spider by means of a scraper of sharp spines on the falces, acting upon a kind of comb formed by elastic corneous rods, situated on the inner face of the maxillæ. My friend, Mr. F. M. Campbell, of Hoddlesdon, has discovered a roughened surface on the outer sides of the falces of some small British spiders of the genus *Linyphia*, formed either by transverse grooves, or raised bands, which he believes to be intended to act as a stridulating apparatus, by means of the friction of a horny knob on the inner surface of the third joint of the palpus. This structure is found in both sexes, but no sound has yet been heard from it. I have myself observed somewhat similar transverse bands on the outer side of the falces of several other small spiders; and it is quite possible that the palpi may be used to rub against them either with or without a special knob or series of points on some one or other of their joints. I look upon this question, however, as very far from settled, though an interesting point is indicated for the observation of facts connected with it. Where stridulating noises are actually made by spiders, it is probably for the purpose of attracting the notice of the opposite sex. Mr. Campbell has lately read a paper on this subject before the Linnean Society, but beyond

† I have also lately noticed this apparatus in *Neriene albipunctata*, Cambr. (p. 122).

the general facts above noted I am not yet acquainted with its details.

VENOM OF SPIDERS.

At p. xxv. (*Introduction*) the venomous nature of British spiders is stated to be doubtful. Some experiments made by my son Bertie (aged 12) during the early autumn of 1879, and witnessed by myself, prove that there is a fluid of a decidedly poisonous quality to human beings injected in the bites of some at least of our spiders. Large and vigorous adult females of *Epeira diademata*, Clk., were allowed to bite the fingers in various places. The spot bitten, and for some little space around, immediately inflamed and caused considerable smarting; in a few minutes a small whitish lump arose with great itching and increased smarting, and remained for several hours; it then gradually subsided, and no more inconvenience was experienced. Similar bites made, on some other occasions, on my own fingers created no such symptoms or sensations. The effect of spiders bites depends no doubt on climatic conditions, and on the state and constitution of the person bitten. The sting of a nettle has, with myself, the precise results detailed above as following the spider's bites upon my son, only differing in this, that the nettle sting leaves a painful itching for one, two, and often more, days afterwards.

SPIDERS LINES.

MODE OF FORMING THEIR SNARES.

At p. xxi., (*Introduction*) it is stated that, in my own belief, the usual method by which the lines are stretched across open spaces is by the spider carrying its line across, drawing it from the spinners as it goes on, and fixing it to the desired spot. Another mode, commonly thought to be a usual one, is that by which the line is omitted from the spinners and carried by a current of air until it touches some projecting point, twig, or branch, to which it adheres, and so enables the spider to traverse the intervening space, or to use the line thus fixed for the

foundation of its snare. Since the above opinion was in press, I have paid much attention to this point, both in the consideration of the observations of others, as well as in observing many snares of different species of *Epeirids*. I have not, indeed, yet been able to observe one of these spiders in the act of laying the foundation line of its snare, but I now come to the conclusion that in many, perhaps in the majority of instances, lines for this purpose are thrown across intervening spaces by the assistance of a current of air. Mr. Blackwall's experiments (*Researches in Zoology*, Ed. I, p. 243, and also noted in the *Report of the British Association* for 1844) shew the possibility of this mode, by its use when the spider, desiring to escape from a spot to which it was confined, used it after vainly trying every other means of escape. Similar, though quite independent, experiments, very lately made by Major F. H. Lang (of Parkstone, Dorset), had a like result. Mons. Léon Becker (of Brussels) has also recently detailed (*Ann. Ent. Soc., Belg., tom. xxii., 1879*) at great length, and in a very interesting way, other experiments of the same nature and leading to the same conclusion. The only observer who (so far as I am aware) has actually witnessed the laying of the foundation line of an *Epeirid* snare is Mr. A. G. Butler (of the British Museum). His observations (fully supporting the *current-carried line* theory) are detailed in *Science for All*, part 18, p. 177, 1879.

MODE OF ATTACHING THE VISCID GLOBULES.

The studding of the lines of their snares, by some *Epeirids*, with viscid globules intended to entrap their prey, is mentioned at p. xx. (*Introduction*) and also at p. 236. Major F. H. Lang, whose experiments are noticed above, has described a method by which he believes these *globules* are placed on the cross-lines of *Epeirid* snares (*Science Gossip*, 1875, p. 53). The globules are commonly supposed to have been formed by separate aggregations, under molecular attraction, of the material of which the line itself is composed, in which case they would be homogeneous with the line itself. Major Lang's observations,

however, show that they are not homogeneous, but that the line is inadhesive, while the globules are (and so remain) continually adhesive, being, in fact, like ‡ perforated beads threaded upon a string; and the line itself may be distinctly seen under a highly magnifying power, running through the globules. I have but little doubt that Major Lang's supposition of their being deposited upon the cross-lines by the central pair of spinners, as the line itself is spun out from another spinner, or pair of spinners, is correct.

‡In all probability, these bead-like globules suggested the name of the genus (*Epeira*). Various derivations of this word have been given by Araneologists, but none has ever appeared to me at all satisfactory. In the absence, therefore, of any direct evidence on the subject, I would suggest that *Epeira* is derived from *epi* upon, and *ciro* "to join in rows in a connected series, as to string beads or pearls." The word *ciro* has, however, another meaning of "to weave" simply, which may therefore be that intended, as merely signifying the weaving powers of these spiders; in this case *epi* would be intensive. This latter meaning does not however seem to me as appropriate as the former, inasmuch as spiders of the Genus *Epeira* do not generally *weave* (in its proper sense) like the *Drassides* and others, but simply *spin lines* in a geometric form.





POSTSCRIPT.

Descriptions and notices of several interesting spiders are here subjoined. Some of them have been very recently met with either in Dorsetshire or Britain; four are new to science, and two were accidentally omitted from Appendix B. Their systematic position may be seen by reference to the list of species contained in the whole work.

GENUS *DICTYNA*, *Sund.*

DICTYNA VIRIDISSIMA.

DICTYNA VIRIDISSIMA, *Walk.* E. Simon, *Arachn. de France* I., p. 183, and *Cambr., Ann. and Mag.* N. H., September, 1879, ser. 5, vol. iv., p. 210.

Adult male, length 2 lines.

Cephalo-thorax reddish yellow-brown with a narrow somewhat irregular, yellowish marginal border, and thinly clothed with coarse white hairs, for the most part arranged in longitudinal lines.

Legs pale greenish yellow-brown; 1.2.4.3; rather slender, moderately long and furnished with hairs only, and (the female) with calamistra on the metatarsi of the fourth pairs. The maxillæ, labium, and sternum (which last is clothed with coarse white hairs) are rather paler than the cephalo-thorax, the falces being of the same colour.

The abdomen is of a greenish hue, thinly clothed with short pale hairs, and changing to a dull yellowish-white after immersion in spirit of wine. In both sexes the supernumerary spinning organ common to the family is present.

The palpi are similar to the legs in colour, and the cubital joint (which is of a strongish somewhat tumid form) has a minute prominent point directed forwards at its fore extremity, rather on the outer side, but not easily seen among the coarse hairs with which the palpus is clothed. The palpal organs are surrounded in front by a black spine, but the slightly twisted process projecting backwards at their base is (unlike the much twisted corresponding one in *D. arundinacea*) inconspicuous.

In its general form and appearance this spider bears close resemblance to *Dictyna arundinacea*, Linn. (p. 49) and other British species; the caput being elevated and particularly gibbous in the occipital region, and the falces somewhat of the same long, curved, characteristic form. It may, however, be easily distinguished, not only by its greenish hue, but by the structure of the palpi and palpal organs.

Examples of this species, found at Box Hill, Surrey, were kindly sent to me in 1879 by Mr. T. Workman, of Belfast. The above description was accidentally omitted in Appendix B.

GENUS EURYOPIS, *Menge*.

EURYOPIS PRONA.

EURYOPIS PRONA, *Menge* (p. 481).

On the 12th of June, 1880, I discovered an adult male and female of this species at the roots of heather on Bloxworth Heath. This is its first recorded occurrence in Dorsetshire.

GENUS NERIENE, *Bl.*

NERIENE CAMPBELLII, sp.n.

Adult male, length rather less than 1 line.

The cephalo-thorax, legs, and other fore parts (excepting the sternum) of this spider are of a reddish yellow-brown hue, and the abdomen brownish black, much mottled with yellowish, which, however, is probably not very distinguishable, excepting

through spirit of wine, and the sternum is suffused with blackish.

The form of the cephalo-thorax is of the ordinary type; looked at in profile the caput and thorax are on the same level, but between them is a strongish incurved dip or depression. The fore part of the ocular area is very slightly prominent, and the height of the clypeus considerably exceeds half that of the facial space. The eyes are moderate and nearly uniform in size, seated on black spots, and pretty closely grouped together. The interval between those of the hind-central pair is nearly about a diameter, and is very slightly, if at all, greater than that which separates each from the lateral eye of the same row on its side; those of each lateral pair are placed obliquely on a strongish tubercle; the fore-centrals are rather the smallest, contiguous to each other, and no more than half a diameter's distance from the fore-laterals. The length of the line formed by the hind-central pair is as nearly as possible equal to that formed by each of them and the fore-central eye opposite to it.

The legs are rather short, and moderately slender (4.1.2.3.); those of the fourth pair being distinctly longer than those of the first; the excess being equal to the length of the tarsus of the first pair. They are furnished with hairs, and a few erect bristles along the upper side of the genual and meta-tarsal joints.

The palpi are short, the cubital joint has two or three, not very strong, tapering bristles directed forwards from near the middle of its anterior side, the strongest bristle being not much, if at all, longer than the joint itself; the radial joint is rather shorter and less strong than the cubital, its fore-extremity is a little produced, with a somewhat pointed dark reddish-brown termination which is directed obliquely outwards; the digital joint is of tolerable size, it is rather raised in a blunt-angular form on its outer side, and its hinder extremity is produced into a sharpish point which comes almost in contact with the inner side of the radial joint. The palpal organs are prominent and complex;

among other processes there is a strongish, irregular, curved one at their base on the outer side.

The falces are small, straight, and perpendicular.

The maxillæ are short, strong, particularly so at the base, and much inclined to the labium, which is very small but of the normal form.

The abdomen is oval; it projects but little over the base of the cephalo-thorax, and its surface is thinly clothed with coarse hairs.

A single example of this small and somewhat obscure, though perfectly distinct, spider was kindly sent to me, among many others, by Mr. F. M. Campbell, by whom it was found in the summer of 1880 at Hoddesdon, Hertfordshire. It appears to be allied to *Nerienne sylvatica*, Bl. (p. 129), but may be easily distinguished by the much larger size of that spider and the peculiar structural details of its palpi and falces.

NERIENE RUSTICA sp.n.

Adult male—length rather more than 1 line; the length of the female being also a little greater than that of the male.

This spider is nearly allied to, but distinct from *Nerienne saxatilis*, Blackw. (p. 124).

The colour of the cephalo-thorax is yellow-brown, suffused with dusky blackish, and marked with blackish converging lateral lines and black margin.

The legs are of a dull reddish orange-yellow, the palpi and falces are more like the cephalo-thorax, the sternum strongly suffused with blackish, and the abdomen black.

The form of the cephalo-thorax is of the ordinary type, the lateral marginal constrictions scarcely perceptible; looked at in profile the caput and thorax are on the same level, with little or no dip or indentation between them, and the fore part of the ocular area is slightly prominent; the clypeus slopes a little forwards, and its height is perhaps somewhat less than half that of the facial space.

The eyes are of tolerable size, rather closely grouped together, and seated on black spots; those of the hind-lateral and lateral pairs are about equal in size, and of a dull, bluish, pearly hue. Those of the posterior row are separated by about equal intervals of slightly less than an eye's diameter; those of the fore-central pair are minute, indistinct, and separated from each other by a small but distinct interval.

The legs are moderate in length and strength (4.1.2.3.), furnished with hairs and a few slender spines, two or three on the tibiae, and one on the genual joints. The tibiae of the first and second pairs are of a darker hue than the rest.

The palpi are short; the cubital joint is very short, and, besides some hairs, has a single, strongish, tapering bristle of about double its length, directed forwards from the extremity on the upper side.

The radial joint is much stronger than the cubital, prominent behind, and has its fore extremity produced into a strongish, tapering, but obtusely pointed, slightly curved apophysis, whose extremity is directed outwards. The digital joint is of moderate size, it has a lobe on the outer side, and is somewhat sub-angularly prominent on the same side near its base; the palpal organs are complex, but tolerably compact, and present no very striking processes.

The falces are moderate in length and strength, directed rather backwards, and slightly divergent at their extremities.

The abdomen is of a rather narrow-oval form, of a glossy black hue, thinly clothed with coarsish hairs, and projects a little over the base of the cephalo-thorax.

The female is similar to the male in colours and general characters; the process connected with the genital aperture is broad, strong, vertically prominent and very conspicuous; the abdomen is very large and projects considerably over the base of the cephalo-thorax.

From *Neriene saxatilis*, Bl., this spider may be distinguished by its rather larger size, the deeper, richer colouring of the legs, and

darker hue in general, as well as by slight differences in the forms of the palpi and structure of the palpal organs.

Adults of both sexes were found among moss in woods at Bloxworth in June, 1880.

GENUS WALCKENAERA, *Bl.*

WALCKENAERA FURCILLATA.

WALCKENAERA FURCILLATA, *Menge* (p. 510).

An adult male and two females of this most remarkable species were found by myself, among heather on Bloxworth Heath, on the 15th of July, 1880. This is the first record of its occurrence in Dorsetshire.

WALCKENAERA LAUDATA sp.n.

Adult male—length 1 line; that of the female being rather greater.

This little spider is of a narrow and *ant-like* form.

The colour of the cephalo-thorax, falces, palpi, maxillæ labium, and sternums, is deep blackish brown, with deeper, but indistinct, lateral converging lines, the colour of the legs being dusky yellowish-brown, in some examples slightly tinged with red, and the abdomen dusky black.

The lateral marginal constrictions at the caput are slight, the upper part of that portion is gibbous, or slightly, but distinctly raised in a convex form, and from above and immediately behind each lateral pair of eyes, a small but distinct indentation runs backwards.

The eyes are small, but those of the hind-central and two lateral pairs do not differ greatly in size; those of the hind-central pair are rather more than an eye's diameter from each other, being separated by a much greater interval (at least double of an eye's diameter) from the hind laterals; those of each lateral pair are seated obliquely

upon a strongish tubercle; those of the fore-central pair are very small and indistinct, contiguous to each other, and, looked at from in front, form an exactly straight line with the fore-lateral eye on each side. The length of the line formed by each fore-central eye with the hind-central on the same side is very little, if anything, greater than that formed by the hind-central pair the height of the clypeus rather exceeds half of that of the facial space.

The legs are moderate in length and strength; those of the first and fourth pairs scarcely differ in length, those of the third pair being shortest. Their armature consists of hairs, a few erect ones being disposed along the upper sides of the tibiæ and metatarsi.

The falces are tolerably long and strong, very nearly perpendicular, and divergent at their extremities.

The palpi are rather short; the radial and cubital joints are about equal in length; the former is the strongest, and is a little produced at its fore extremity on the upper side, but has no distinct process or apophysis; it is furnished with hairs, of which some form a rather prominent group or tuft near the middle of the outer side. The digital joint is small, with a large lobe on the outer side, giving it a somewhat subtriangular form. The palpal organs are well developed, but not very complex; there is a large prominent lobe-like process towards the outer extremity; a long slender black spine issues from inside the process, and taking a very sinuous form projects its much-bent filiform extremity beyond the palpal organs in contact with, or enveloped in delicate membrane.

The abdomen is of a rather narrow-oval form, glossy, of a dusky black hue, and thinly clothed with hairs.

The foregoing description applies specially to the male.

The female resembles the male in colours and other general characters. The upper part of the caput is less gibbous, and the interval between the hind-central and hind-lateral eyes is consequently less, as also is the height of the clypeus.

I met with adults of both sexes of this spider at the roots of heather on sandy spots at Bloxworth Heath during the month of June, 1880. It occurs in company with a little ant (*Myrmica fusca*) which is abundant on the same spots, and to which the spiders bear such an exceedingly close resemblance, both in general form and colours, that it needs a practised eye to distinguish them when running about together. It is closely allied to, but I think quite distinct from, *Walckenaera bicolor*, Blackw., of which, unfortunately, the only example I ever possessed was accidentally destroyed many years ago.

WALCKENAERA MELANOCEPHALA, sp.n.

Adult male, length nearly about 1-10th of an inch; female 1-8th.

The thorax and legs are of a bright reddish-orange colour; the caput and palpi, as well as the tibiae of the first and second pairs of legs, being black, or strongly suffused with blackish; the falcies also are the same, though less strongly suffused than the rest, and the sternum slightly so. The abdomen is black and glossy.

The occipital portion of the caput is considerably elevated; looked at in profile the elevation is convexly curved in a slightly sloping direction from the anterior to the posterior extremity, which is rather below the level of the highest part of the thorax. The elevation is marked on each side, from the ordinary level of the caput by a deep, horizontal, tapering indentation, which runs backwards from just above and behind the hind-lateral eye, and at its fore part the elevation drops rather abruptly to the ordinary level.

The eyes of the hind-central pair are placed at the fore-extremity of the elevation, and are separated by a very little more than a diameter's interval; their distance from the fore-central pair being nearly about equal to that which separates the two lateral pairs. The transverse line of the anterior eyes of

these two pairs runs a little further back than that of the fore-central pair, which are the smallest of the eight and contiguous to each other. The eyes of each lateral pair are placed slightly obliquely and contiguously on a tubercle, and are apparently rather larger, and of a more pearly hue than those of the hind-central pair. The height of the clypeus is less than half that of the facial space; it is prominent, particularly in the centre, which projects somewhat forward in a rather blunt-conical form.

The legs are moderate in length and strength, and furnished with hairs only; their relative length being 1.4.2.3, though their actual length does not differ very greatly.

The palpi are moderately long; the cubital joint is longer than the radial, and enlarges slightly to the fore-extremity. The radial joint is short, but strong, obtusely prominent behind, and produced into two longish, tapering apophyses at the extremity in front; one (the most prominent and strongest) at the middle, the other on the inner side, less conspicuous, and closely adhering to the digital joint, their length being about equal to that of the joint itself. The digital joint is of tolerable size, oval, with a largish lobe at the base on the outer side; the palpal organs are complex, with a short, circularly-curved, sharp pointed, black spine at their fore extremity on the outer side.

The falces are rather long, slender, a little prominent at their base in front, and divergent at their extremities. I could not discern any denticulation on the inner sides.

The abdomen is of a short-oval form, and projects but slightly over the base of the cephalo-thorax; its surface is covered thinly with short hairs.

The female differs only in size and in wanting the elevation on the caput, which is, however, rather gibbous at the occiput, and there is (in profile) a deep notch or depression between the gibbosity and the beginning of the hinder slope.

Adults of both sexes of this very striking and distinct species were found at the roots of grass and herbage in woods at Bloxworth, on the 20th of July, 1880. It is of a very ant-like appearance when running, and the contrast of the black caput,

fore-tibiae, and palpi with the reddish-orange legs and thorax is very strong and characteristic.

GENUS LYCOSA.

LYCOSA AGRICOLA.

LYCOSA AGRICOLA, *Thor.*, Syn. Eur. Spid. p. 278, and *Cambr.*, Ann. and Mag. N. H., ser. 4., vol. 16, p. 255.

„ FLUVIATILIS, *Bl.*, Spid. Great Brit. and Irel., p. 31, pl. ii., fig. 13.

In size, form, and general structure this spider is very closely allied to *Lycosa arenicola*, *Cambr.* (p. 373), but may be distinguished by its, usually, more uniformly hoary-grey hue, as well as by the central longitudinal pale band on the cephalo-thorax being distinctly dilated behind the eyes. In females this dilation appears to be constant, and, with rare exceptions, it is so also in the males. In the present spider the legs are always more or less distinctly annulated, especially in the females; a character I have not observed in any one of a large number of examples of *Lycosa arenicola*. These very tangible and distinctive characters will suffice to separate the two species. There are, however, differences (but not so easily observed) in the structure of the palpal organs.

Lycosa agricola occurs abundantly in North Wales, the lake district of England, and also in Scotland, chiefly among stones and fragments of rock on the banks of rivers and in the dried up beds of streams.

The above description was accidentally omitted in Appendix B.





SYNOPSIS OF THE FAMILIES OF BRITISH SPIDERS.

† TERRITELARIÆ.

Spiders forming their nests in cylindrical holes in the earth; the aperture usually closed by a distinct, hinged lid. (The only British species, however, are an exception; see p. 3.)

THERAPHOSIDES.—*Eyes* 8.

p. 1. *Falces* articulated horizontally with a vertical movement.

Spinners 4 or 6, those of the superior pair, long, strong and upturned.

Normal spiracular openings four in number, widely separated, forming a large square figure, and all leading to *Sac-Tracheæ*.

Legs robust; terminal tarsal claws 3.

Palpi (of the female) pediform, and used in locomotion.

Spiders mostly of large size, robust, hairy, and of sombre colouring.

TUBITELARIÆ.

Spiders forming nests of a tubular kind, spun in crevices, under stones, in angles of buildings, and such like situations. At their outer extremity these domiciles are often expanded into more or less diffuse sheets of web.

† The seven groups, *Territelaria*, &c., into which the families of British spiders are here divided, have some of them been noticed pp. xx., xxiii. Introduction. They represent the old Latreillean families of spiders, and are based either on the different forms of web, or on the mode of progression. These groups are indicated here, although not of great value from a scientific point of view, because they are both of interest and assistance to the collector in determining the primary systematic position of his captures. Dr. Thorell indeed has raised these groups (though, it appears to me, without sufficient reason) to the rank of *Suborders*. (T. Thorell on European spiders, p. 42).

DYSDERIDES.—*Eyes* 6. *Spinners* 6.

p. 5. *Falces* articulated, either *vertically* or *on an inclined plane*, with a more or less lateral movement.

Normal spiracular openings 4, near together, forming a narrow, transverse, oblong figure, two on each side of the genital aperture, the anterior opening on each side leading to *Tube-Tracheæ*. Terminal tarsal claws 2 or 3.

Spiders mostly of moderate size and cylindrical form; colours subdued, and markings the exception.

DRASSIDES.—*Eyes* 8, in two transverse rows. *Spinners* 6.

p. 11. **Falces* articulated *vertically* with lateral movement.

**Normal spiracular openings* 2; one on each side of the genital aperture, and leading to *Sac-Tracheæ*.

Terminal tarsal claws 2 only.

Spiders mostly of moderate size, cylindrical form, and very sombre colours, usually with either an indistinct pattern, or none at all.

RETITELARIÆ.

Spiders spinning snares of a more or less diffuse and mazy nature, consisting usually of thin sheets of web, surrounded by numerous irregularly disposed, intersecting lines affixed to the neighbouring objects.

ERESIDES.—*Eyes* 8. *Four* form a large quadrangular figure, and

p. 45. *four others* a small one at the middle of the anterior side of the large one.

Legs of fourth pair with calamistra on the meta-tarsi of females.

*These characters are common to all the remaining families of British spiders.

Terminal tarsal claws 3.

Supernumerary spinning organ in both sexes, immediately in front of the ordinary 6 spinners.

Spiders of moderate size, short robust form, with a somewhat quadrate, massive cephalothorax, and without lateral constriction at the caput. The colours of the males are bright and vivid.

DICTYNIDES.—*Eyes* 8, in two transverse curved rows.

p. 48. *Calamistra*, *supernumerary spinning organ*, and number of *tarsal claws* as in *Eresides*.

Spiders mostly of moderate size, and moderately robust form, strongly constricted on the lateral margins of the caput. Their colours and markings are subdued but distinctive.

AGELENIDES.—*Eyes* 8, as in *Dictynides*.

p. 58. *Legs* generally long, hairy and armed with spines, but without *calamistra*.

Terminal tarsal claws 3.

Spinners 6. Those of the superior pair generally much the longest and upturned. No *supernumerary spinning organ*.

Spiders varying greatly in size, but of moderately robust form, and strongly constricted laterally at the caput. Colours and markings distinct but generally of a subdued tone.

SCYTODIDES.—*Eyes* 6, in three groups (of two each) forming a triangular figure. *Spinners* 6.

p. 74.

Legs long, slender.

Terminal tarsal claws 3, springing from a small *supernumerary claw-joint*.

Spiders of moderate size, and compact form, with great development of the thoracic region, and very slight lateral constriction

at the caput. Colours and markings distinct and strongly contrasted.

PHOLCIDES.—*Eyes* 6 or 8 (8 in the only known British genus p. 76. in three groups, placed transversely, 3.2.3.).

Spinners 6.

Legs excessively long, slender, and weak.

Terminal tarsal claws 3.

Spiders of rather small size and dull colours, with short, roundish cephalo-thorax, and somewhat cylindrical abdomen; and almost always found in houses or ruins.

THERIDIIDES.—*Eyes* 8; generally pretty closely grouped together p. 79. in four pairs, or two transverso, more or less curved rows.

Spinners 6.

Legs for the most part moderately long, rather slender, and armed with spines in some of its groups.

Lateral marginal constriction at the caput seldom very strong.

Terminal tarsal claws 3. In some of the largest groups the *palpi* of the females are without the terminal claw.

Spiders mostly of small size, and the abdomen—especially of females—in some groups large, and more or less globular in form.

This family includes the greater number of British spiders.

ORBITELARIÆ.

Spiders forming snares of a more or less perfect geometric or wheel shape, consisting of numerous radii diverging from a central point and crossed by other regularly disposed parallel lines from the centre to the circumference.

EPEIRIDES.—*Eyes* 8; arranged in three generally rather widely p. 297. separated groups, placed transversely, 2.4.2.

Legs tolerably long, strong, and armed with spines.

Ordinary tarsal claws 3; strong, and opposed by others of a pectinated, or toothed form near the extremities of the tarsi.

Palpi of the females furnished with a terminal claw.

Spinners, 6, short, arranged in a compact group.

Spiders exceedingly varied both in size and general form, all (nearly) marked with bright colours and distinctive pattern.

ULOBORIDES.—*Eyes* 8; the laterals on each side very widely separated from each other.
p. 284.

Legs of the first pair usually much the longest and strongest, especially in the male sex.

Calamistra, in female only, on the metatarsi of the fourth pair.

Tarsal claws as in the *Epeirides*.

Supernumerary spinning organ in both sexes.

General form robust; cephalo-thorax short broad, pointed in front, with little or no lateral marginal constriction at the caput.

Abdomen large, often humped and greatly projecting over the thorax; colours and pattern sombre and subdued.

Spiders of moderate size.

LATERIGRADÆ.

Spiders with legs extended laterally, and moving freely backwards, as well as forwards and sideways, like a crab.

THOMISIDES.—*Eyes* 8; usually small, and forming a semi-circular figure, whose convexity is directed forwards.
p. 287.

Legs extended *laterally*, those of the first and second pairs generally much the longest and strongest, and spinous.

Terminal tarsal claws two only.

Spinners 6.

With few exceptions these spiders are of a short, broad form, and the laterally extended legs have a remarkably crab-like appearance, moving with equal facility sideways or ahead. They spin no snare.

CITIGRADÆ.

Active spiders, thickly clothed with hairs, of a strong build, and running swiftly in the daytime over the surface of the ground. Although a well-marked group, in point of form and structure, this is the least well-characterized of the seven groups. Many of the spiders also form cylindrical holes in the earth, lining them with silk, and often covering the aperture with particles of herbage drawn together; but the most superficial examination of their eyes and spiracular openings will prevent their being mistaken for *Territelariæ*.

LYCOSIDES.—*Eyes 8; four large ones form a large quadrangular*
 p. 343. *figure on the upper side of the caput, and*
four small ones form a transverse line on its
face immediately below the quadrangle.

Legs long, strong, armed with spines.
Terminal tarsal claws three.

Spinners 6.

The *cephalo-thorax* is considerably convex above; of a narrow, keel-like form, with the caput rather drawn out, and its lateral marginal constriction moderate and gradual.

The *Lycosides* form a large group of spiders, mostly of moderate, but sometimes large size, elongate form, and thickly clothed with hairs and pubescence; they spin no snare, and are evidently formed for sustained activity. The females carry their egg cocoon attached to the spinners, and bear

about their young on their backs for a short time after they are hatched.

The genus *Ocyale* (p. 345), with which this family begins, appears more properly to belong to the family *Podophthalmides*, Cambr. It is, however, an extreme representative of that family, with close affinities to the *Lycosides* proper, and has hitherto always been included with the latter. I have not, therefore, here removed it from them.

OXYOPIDES.—*Eyes* 8; in four transverse unequal rows of two eyes each, forming a somewhat triangular figure, the apex of which is in front, and truncated, the base being convexly curved.

Spinners 6.

Legs moderately long and strong, armed with numerous and very long spines. Terminal tarsal claws three.

Cephalo-thorax remarkable for the massive caput, which has no marginal lateral constrictions, but runs evenly all round into the thorax. Its *facies* viewed from in front is large and of a subtriangular form.

Abdomen large in front, going off gradually to a point at the spinners.

Spiders of a rather robust form, of moderate size (in its only British representative), active in their habits, both in running among coarse herbage, and in leaping. They spin no snare.

SALTIGRADÆ.

Spiders whose usual progress is by a succession of leaps. Although some spiders of the group *Tubitelariæ* and *Citigradæ* leap freely, yet the present is a group well marked by its mode of progression.

SALTICIDES.—*Eyes* 8, *exceedingly unequal in size*, in 3 transverse rows, 4.2.2., or forming a *large quadrangular figure*, and occupying the greater part of the top of the caput. The central pair of the anterior row are always largest, and those of the middle row the smallest.

Spinners 6.

Legs moderately long, often greatly differing in strength; terminal tarsal claws 2.

Caput almost always as broad as the thorax, and without any lateral marginal constriction.

These are spiders which, with a few exceptions, are noted for their leaping habits. The large quadrate cephalo-thorax gives a general form not easily mistaken, although in respect to robustness there is immenso variation in the different groups. They spin no snare, though they frequently form silken nests of a tubular and other kinds.



*Table showing the different Families, Genera, and number of Spiders found in Great Britain and Dorsetshire respectively:—

		DORSETSHIRE.		GRT BRITAIN.	
		No. of Species in each Genus.	Total in each Family.	No. of Species in each Genus.	Total in each Family.
Theraphosides.	Atypus ..	3	3	3	3
Dysderides.	Dysdera ..	2		2	
	Harpactes ..	1		1	
	Segestria ..	2		3	
	Oonops ..	1		1	
	Schoenobates..	0	6	1	8
Drassides.	Micaria ..	2		2	
	Gnaphosa ..	3		4	
	Prosthesima ..	6		8	
	Drassus ..	9		13	
	Clubiona ..	14		15	
	Chiracanthium	3		4	
	Anyphæna ..	1		1	
	Agroeca ..	5		5	
	Liocranum ..	1		1	
	Hecæorge ..	2		2	
	Phrurolithus..	1	47	1	56
Eresides.	Eresus ..	1	1	1	1
Dictynides.	Dictyna ..	4		7	
	Lethia ..	4		7	
	Amaurobius ..	3	11	3	17
Agelenides.	Argyroneta ..	0		1	
	Coelotes ..	1		2	
	Agelena ..	1		3	
	Tegenaria ..	4		5	
	Tetrrix ..	2		2	
	Cryphoea ..	1		2	
	Hahnia ..	5	14	5	20

* At the time of the publication of the *Preface* (pp. i—iii) in June, 1879, the number of British Spiders then known amounted to 510 species, of which 358 had been found in Dorsetshire. At the present time (July 31, 1880) the total number of British Spiders known is 518, of which the Dorsetshire list comprises 373. The British Genera are 85 in number (comprised in 15 families), those represented in Dorsetshire being 77, in 14 families.

		DORSETSHIRE.		GRT BRITAIN.	
		No. of Species in each Genus.	Total in each Family.	No. of Species in each Family.	Total in each Family.
SCYTODIDES.	Scytodes ..	1	1	1	1
PHOLCIDES.	Pholcus ..	1	1	1	1
THERIDIIDES.	Episinus ..	1		1	
	Pholcomma ..	1		1	
	Theridion ..	13		18	
	Theridiosoma ..	1		1	
	Dipoena ..	1		1	
	Nesticus ..	1		1	
	Phyllonethis ..	2		2	
	Steatoda ..	3		6	
	Euryopsis ..	4		6	
	Asagona ..	1		1	
	Robertus ..	1		1	
	Neriono ..	58		89	
	Walckenaëra ..	46		61	
	Pachygnatha... ..	3		3	
	Tapinopa ..	1		3	
	Linyphia ..	47		70	
	Ero ..	2	186	2	267
EPEIRIDES.	Meta ..	2		3	
	Tetragnatha ..	1		1	
	Cyclosa ..	1		1	
	Singa ..	4		4	
	Cercidia ..	1		1	
	Zilla ..	2		2	
	Epeira ..	16	27	20	32
ULOBORIDES.	Uloborus ..	1		1	
	Hyptiotes ..	0	1	1	2
THOMISIDES.	Thomisus ..	1		1	
	Misumena ..	1		2	
	Diaea ..	1		2	
	Xysticus ..	12		16	
	Oxyptila ..	6		6	
	Philodromus ..	9		13	
	Thanatus ..	1		1	
	Tibellus ..	1		1	
	Micrommata ..	1	33	1	43

		DORSETSHIRE.		GR'T BRITAIN.	
		No. of Species in each Genus.	Total in each Family.	No. of Species in each Genus.	Total in each Family.
LYCOSIDES.	Ocyale ..	1		1	
	Dolomedes ..	1		1	
	Pirata ..	4		5	
	Trochosa ..	4		6	
	Tarentula ..	4		7	
	Lycosa ..	12	26	15	35
OXYOPIDES.	Oxyopos ..	0	0	1	1
SALTICIDES.	Epiblemum ..	3		3	
	Heliophanus ..	3		3	
	Marpessa ..	0		4	
	Ballus ..	1		1	
	Neon ..	1		1	
	Euophrys ..	3		5	
	Attus ..	2		4	
	Hycia ..	0		2	
	Hasarius ..	1		4	
	Phlegma ..	1		1	
	Ælurops ..	1		1	
	Philæus ..	0		1	
	Salticus ..	0	16	1	31
	Total ..		373		518





*SYSTEMATIC LIST OF BRITISH SPIDERS.

The names of those not yet found in Dorsetshire are printed in Italics.

THERAPHOSIDES.

- Atypus piceus*, Sulz., p. 2, pl. II., fig. 2.
,, *Blackwallii*, Sim., p. 4.
,, *Beckii*, Cambr., p. 4.

DYSDERIDES.

- Dysdera Cambridgii*, Thor., p. 6, pl. II., fig. 3, 4.
,, *crocata*, C. L. Koch, p. 6, pl. II., fig. 6.
Harpactes Hombergii, Scop., p. 7.
Segestria senoculata, Linn., p. 7.
,, *Bavarica*, C. L. Koch, p. 8, pl. II., fig. 1.
,, *Florentina*, Rossi, p. 459.
Oonops pulcher, Templeton, p. 9, pl. II., fig. 5.
Schenobates Walkeri, Bl., p. 458.

DRASSIDES.

- Micaria pulicaria*, Sund., p. 12.
,, *scintillans*, Cambr., pp. 12 and 571.
Gnaphosa Anglica, Cambr., p. 14.
,, *lugubris*, C. L. Koch., p. 418.
,, *lucifuga*, Bl., Leach, p. 462.
,, *suspecta*, Cambr., p. 419.

*The order in which the genera and species are arranged in this list is not quite the same as that in which they stand in the body of the work. The present arrangement is that which, on a further study of the different groups, appears to me the more natural one.

Prothesima electa, C. L. Koch, p. 462.

- „ *Petiverii*, Scop., p. 15.
- „ *pedestris*, C. L. Koch, p. 15.
- „ *nigrita*, Fabr., p. 16.
- „ *lutetiana*, L. Koch, p. 463.
- „ *latitans*, L. Koch, p. 420.
- „ *Latreillii*, C. L. Koch, p. 421.
- „ *longipes*, L. Koch, p. 422.

Drassus Blackwallii, Thor., p. 17.

- „ *infuscatus*, Westr., p. 423.
- „ *criminalis*, Cambr., p. 20.
- „ *ferrugineus*, Bl., p. 460.
- „ *troglydites*, C. L. Koch, p. 17.
- „ *braccatus*, L. Koch (sub. *Drassus bulbifer*, Cambr.), p. 18, pl. III., fig. 1. and p. 570.
- „ *lapidicolens*, Walck., p. 19, pl. I., fig. 12. 12a., and pl. III., fig. 2.
- „ *reticulatus*, Bl., p. 460.
- „ *cupreus*, Bl., p. 461.
- „ *sylvestris*, Bl., p. 460.
- „ *pubescens*, Thor., p. 20.
- „ *minor*, Cambr., p. 424.
- „ *delinquens*, Cambr., p. 21.

Clubiona grisea, L. Koch, p. 22.

- „ *formosa*, Bl., p. 464.
- „ *terrestris*, Westr., p. 23.
- „ *reclusa*, Cambr., p. 24.
- „ *lutescens*, Westr., p. 24.
- „ *neglecta*, Cambr., p. 25, pl. III., *fig. 3.
- „ *pallidula*, Clerck, p. 26.
- „ *corticalis*, Walck., p. 26.
- „ *holosericea*, De Geer., p. 27.
- „ *brevipes*, Bl., p. 28.
- „ *cærulescens*, L. Koch, p. 39.

*Named erroneously in "Description of Plate III." *Clubiona reclusa*, Cambr.

Clubiona compta, C. L. Koch, p. 29.

„ *trivialis*, L. Koch, p. 30.

„ *pallens*, L. Koch, p. 31.

„ *subtilis*, L. Koch, p. 31.

Chiracanthium carnifex, Fabr., p. 32.

„ *erraticum*, Bl., p. 464.

„ *Pennyi*, Cambr., p. 464.

„ *nutrix*, Westr., p. 33.

Anyphaena accentuata, Walek., p. 34, pl. i., fig. 11.

Agroeca brunnea, Bl., p. 35, pl. ii., fig. 7a.

„ *proxima*, Cambr., p. 36.

„ *gracilipes*, Bl. (sub. *Liocranum*), pp. 39 and 570.

„ *celer*, Cambr. (sub. *Liocranum*), pp. 40 and 570.

„ *celans*, Bl. (sub. *Liocranum*), pp. 41 and 571.

Liocranum domesticum, Wid., p. 38.

Hecäerge Maculata, Bl., p. 42.

„ *nemoralis*, Bl., p. 43.

Phrurolithus festivus, C. L. Koch, p. 44, pl. i., fig. 15.

ERESIDES.

Eresus cinnaberinus, Oliv., p. 45, pl. vi., fig. 4.

DICTYNIDES.

Dictyna arundinacea, Linn., p. 49, pl. vi., fig. 5.

„ *pusilla*, Westr., p. 426.

„ *uncinata*, Westr., p. 50.

„ *latens*, Fabr., p. 50.

„ *lugubris*, Cambr., p. 466.

„ *viridissima*, Walek., p. 589.

„ *variabilis*, C. L. Koch, p. 466.

Lethia humilis, Bl., p. 51.

„ *Mengii*, Cambr., p. 52.

„ *puta*, Cambr., p. 53.

„ *albispiraculis*, Cambr., pp. 53 and 571.

„ *subniger*, Cambr., p. 467.

„ *patula*, Sim., p. 470.

Lethia spinigera, Cambr., p. 468.

Amaurobius fenestralis, Stroem, p. 56.

„ *similis*, Bl., pp. 54 and 571, pl. I., fig. 9, 10.

„ *ferox*, Walck., p. 56.

AGELENIDES.

Argyroneta aquatica, Clerck, p. 471.

Cryphoea moerens, Cambr., pp. 59 and 571.

„ *silvicola*, C. L. Koch, p. 474.

Coelotes atropos, Walck., p. 60.

„ ? *immaculatus*, p. 472.

Tegenaria atrica, C. L. Koch, p. 62.

„ *Guyonii*, Guérin, p. 473.

„ *Derhamii*, Scop., p. 63.

„ *campestris*, C. L. Koch, p. 64.

„ *Cinerea*, Panz., p. 65.

Textrix denticulata, Oliv., p. 66.

„ *boopis*, Cambr., p. 66.

Agelena labyrinthica, p. 67, pl. I., fig. 1, 8.

„ *Hyndmannii*, Bl., p. 472.

„ *prompta*, Bl., p. 473.

Hahnina elegans, Bl., p. 69.

„ *nava*, Bl., p. 69.

„ *montana*, Bl., p. 70.

„ *candida*, Sim., p. 71.

„ *helveola*, Sim., p. 72.

SCYTODIDES.

Scytodes thoracica, Latr., p. 75, pl. VI., fig. 6.

PHOLCIDES.

Pholcus phalangioides, Fuessl., p. 77, pl. I., fig. 14, and pl. VI., fig. 3.

THERIDIIDES.

Episinus truncatus, Walck., p. 80.

Pholcomma gibbum, p. 82, pl. III., fig. 5.

Theridion formosum, Clk., p. 83, pl. iv., fig. 1.

- „ *tepidariorum*, C. L. Koch., p. 83.
- „ *riparium*, Bl., p. 84.
- „ *pictum*, Hahn., p. 476.
- „ *sisyphium*, Clk., p. 85.
- „ *venustum*, Walek., p. 476.
- „ *familiale*, Cambr., p. 86.
- „ *denticulatum*, Walek., p. 86.
- „ *varians*, Hahn., p. 87.
- „ *tinctum*, Walek., p. 88.
- „ *simile*, C. L. Koch, p. 88.
- „ *rufolineatum*, Luc., p. 89.
- „ *pulchellum*, Walek., p. 90.
- „ *bimaculatum*, Linn., p. 91.
- „ *triste*, C. L. Koch., p. 477.
- „ ? *auratum*, Bl., p. 477.
- „ *pallens*, Bl., p. 92, pl. ii., fig. 8.
- „ *albens*, Bl., p. 477.

Theridiosoma argenteolum, Cambr., pp. 428 and 572.

Dipoean melanogaster, p. 478.

Nesticus cellulanus, Clk., p. 93.

Phyllonethis lineata, Clk., p. 94.

- „ *instabilis*, Cambr., p. 95.

Steatoda bipunctata, Linn., p. 96.

- „ *sticta*, Cambr., p. 96, pl. iii., fig. 4.
- „ *versuta*, Bl., p. 479.
- „ *Clarkii*, Cambr., p. 480.
- „ *guttata*, Wld., p. 99.
- „ ? *homatostigma*, Bl., p. 479.

Euryopis flavomaculata, C. L. Koch, p. 100.

- „ ? *fusca*, Bl., p. 480.
- „ *inornata*, Cambr., p. 100.
- „ *Blackwallii*, Cambr., p. 481.
- „ *prona*, Menge, pp. 481 and 590.
- „ *coracina*, C. L. Koch (sub. *Steatoda*), pp. 98 and 573.

Asagena phalerata, Panz., p. 102.

Robertus astutus, Cambr., p. 103, pl. vi., fig. 7.

Nerieno atra, Bl., p. 106.

„ *longipalpis*, Sund., p. 107.

„ *promiscua*, Cambr., p. 482.

„ *dentipalpis*, Wid., p. 108.

„ *pascalis*, Cambr., p. 483.

„ *graminicola*, Bl., p. 108.

„ *curtipes*, Cambr., p. 484.

„ *nigra*, Bl., p. 109.

„ *tibialis*, Bl., p. 483.

„ *rufipes*, Sund., p. 110.

„ *rubens*, Bl., p. 111.

„ *bifida*, Cambr., p. 112.

„ *isabellina*, C. L. Koch, p. 112.

„ *herbigrada*, Bl., pp. 113 and 576.

„ *pygmæa*, Bl., p.

„ *affinis*, Bl., p. 114.

„ *Huthwaitii*, Cambr., p. 486.

„ *formidabilis*, Cambr., p. 135.

„ *dentata*, Wid., p. 115.

„ *fusca*, Bl. (sub. *N. agrestis*), p. 115, and see pp. 486 and 574.

„ *agrestis*, Bl., p. 486.

„ *retusa*, Westr., p. 116.

„ *apicata*, Bl., p. 116.

„ *gibbosa*, Bl., p. 117.

„ *tuberosa*, Bl., p. 117.

„ *cornuta*, Bl., p. 118.

„ *bituberculata*, Bl., p. 119.

„ *rudis*, Cambr., p. 484.

„ *Clarkii*, Cambr., p. 119.

„ *excisa*, Cambr., p. 487.

„ *latebricola*, Cambr., p. 120.

„ *viva*, Cambr., p. 435.

„ *dolosa*, Cambr., p. 126.

- Neriene* { *diluta*, Cambr., pp. 437 and 575.
 „ { *demissa*, Cambr., pp. 438 and 575.
 „ *lucida*, Cambr., p. 127.
 „ *vigilax*, Bl., p. 113.
 „ *viaria*, Bl., p. 127.
 „ *nigriceps*, Cambr., p. 128.
 „ *fugax*, Cambr., p. 121, pl. xv., fig. 2.
 „ *neglecta*, Cambr., p. 121.
 „ *livida*, Bl., p. 121.
 „ *albipunctata*, Cambr., p. 122.
 „ *arundineti*, Cambr., p. 135.
 „ *uncata*, Cambr., p. 433.
 „ *reproba*, Cambr., p. 431.
 „ *rufa*, Wid., p. 123.
 „ *sylvatica*, Bl., p. 129.
 „ *pallipes*, Cambr., p. 133.
 „ *saxatilis*, Bl., p. 124.
 „ *rustica*, Cambr., p. 592.
 „ *decora*, Cambr., p. 492.
 „ *pholcommoides*, Cambr., p. 212 (sub *Linyphia*) and p. 575
 „ *Sundevallii*, Westr., p. 125.
 „ *Campbellii*, Cambr., p. 590.
 „ *innotabilis*, Cambr., pp. 131 and 574.
 „ *subtilis*, Cambr., p. 131.
 „ *anomala*, Cambr., p. 133.
 „ *conigera*, Cambr., pp. 132 and 574.
 „ *cornigera*, Bl., p. 430.
 „ *mollis*, Cambr., p. 134.
 „ *Douglasii*, Cambr., p. 488.
 „ *lapidicola*, Thor., p. 489.
 „ *sublimis*, Cambr., p. 491.
 „ *incisa*, Cambr., p. 489.
 „ *mystica*, Cambr., p. 490.
 „ *penicillata*, Westr., p. 130.

* Two names bracketed indicate that the spiders are now ascertained to be identical in species.

Neriono nefaria, Cambr., p. 439.

„ *pavitans*, Cambr., p. 493.

„ *clara*, Cambr., p. 492.

„ *pudens*, Cambr., p. 493.

„ *morula*, Cambr., p. 494.

„ *aspera*, Cambr., p. 136.

„ *aperta*, Cambr., p. 137.

„ *hispida*, Cambr., p. 137.

„ *jugulans*, Cambr., p. 138.

„ *bicuspis*, Cambr., p. 136.

„ *improba*, Cambr., p. 442.

„ *furva*, Bl., p. 494.

„ *pulla*, Bl., p. 495.

„ *lugubris*, Bl., p. 495.

„ *avida*, Bl., p. 496.

„ *timida*, Bl., p. 496.

„ *minima*, Walek., p. 497.

„ *sulcata*, Bl., p. 497.

„ *dubia*, Bl., p. 498.

„ *montana*, Bl., p. 498.

„ *pilosa*, Bl., p. 498.

„ *pallidula*, Bl., p. 499.

„ *carinata*, Bl., p. 499.

Walekenäera brevis, Wid., p. 142.

„ *brevipes*, Wid., p. 142.

„ *minutissima*, Cambr., p. 500.

„ *scabrosa*, Cambr., p. 143.

„ *pratensis*, Bl., p. 502.

„ *Meadii*, Cambr., p. 502.

„ *præcox*, Cambr., p. 143.

„ *ingrata*, Cambr., p. 443.

„ *subitanea*, Cambr., p. 144.

„ *subæqualis*, Westr., p. 501.

„ *saxicola*, Cambr., pp. 145 and 578.

„ *laudata*, Cambr., p. 594.

„ *diceros*, Cambr., p. 145, pl. iii., fig. 6.

Walckenäera *incurvata*, Cambr., p. 503.

- „ nudipalpis, Westr., p. 445.
- „ obtusa, Bl., p. 447.
- „ *Hardii*, Bl., p. 504.
- „ punctata, Bl., p. 148.
- „ atro-tibialis, Cambr., p. 146.
- „ cuspidata, Bl., p. 146.
- „ unicornis, Cambr., p. 147.
- „ monoceros, Wid., p. 148.
- „ prominula, Cambr., p. 448.
- „ bifrons, Bl., p. 149.
- „ humilis, Bl., p. 150.
- „ { affinitata, Cambr., pp. 150 and 577.
- „ { crassiceps, Westr., pp. 151 and 577.
- „ cristata, Bl., p. 152.
- „ permixta, Cambr., p. 153.
- „ *Thorellii*, Westr., p. 508.
- „ fuscipes, Bl., p. 154.
- „ ignobilis, Cambr., p. 155.
- „ scabricula, Westr., p. 156.
- „ *cirrifrons*, Cambr., p. 508.
- „ parallela, Bl., p. 156.
- „ *nodosa*, Cambr., p. 509, pl. vi. fig. 8 f.
- „ jucundissima, Cambr., p. 449, pl. vi., fig. 8.
- „ cucullata, C. L. Koch, p. 451.
- „ antica, Wid., p. 153.
- „ furcillata, Menge, pp. 510 and 594.
- „ pumila, Bl., p. 157.
- „ obscura, Bl., p. 158.
- „ hiemalis, Bl., pp. 160 and 577.
- „ { flavipes, Bl., pp. 159 and 577.
- „ { implana, Cambr., pp. 162 and 577.
- „ trifrons, Cambr., p. 166, pl. iv., fig. 3.
- „ Beckii, Cambr., p. 162.
- „ latifrons, Cambr., p. 161.
- „ pusilla, Wid., p. 164.

- „ *picina*, Bl., p. 163.
- „ *erythropus*, Westr., p. 165.
- „ *nemoralis*, Bl., p. 167.
- „ *ludicra*, Cambr., p. 168.
- „ *melanoccephala*, Cambr., p. 596.
- „ *altifrons*, Cambr., p. 169.
- „ *frontata*, Bl., p. 170.
- „ *acuminata*, Bl., p. 171, pl. iv., fig. 4.
- „ *sordidata*, Thor., p. 505.
- „ *parva*, Bl., p. 505.
- „ *turgida*, Bl., p. 505.
- „ *bicolor*, Bl., p. 506.
- „ *exilis*, Bl., p. 506.
- „ *vafra*, Bl., p. 507.
- Pachygnatha *Clerckii*, Sund., p. 173.
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*ERRATA ET CORRIGENDA.

Page i., line 13 from top, *for* miseroscopic *read* microscopic.

„ viii., bottom line, insert a hyphen between the words
papilli and *form*.

„ ix., line 5 from top, *for* elaw *read* claw.

„ xxxii., top line, *for* larva *read* larvæ.

„ xxxix., line 8 from top, *for* causes *read* causing.

„ 1, line 3 from top, *crase the comma at the end*, and place it
after the word *it*.

„ 2, line 13 from top, *for* papal *read* palpal.

„ 5, line 3 „ *for* thoræica *read* thoracica.

„ 5, line 6 „ *place a bracket after* rarity.

„ 8, line 12 „ *for* curved *read* armed.

„ 19, line 12 „ *for* serie *read* series.

„ 25, line 3 „ *for* cresent *read* crescent.

„ 37, line 10 „ *for* rushes *read* stalks of various plants.

„ 52, line 3 „ *after* longitudinally *insert* on the fore
half.

„ 54, line 2, „ *for* wel *read* well.

„ 74, line 4 from bottom, *after the word* small *add* attached
to a distinct supernumerary claw-joint.

„ 74, line 6 from the bottom, *for* 4.1.2.3. *read* 1.4.2.3.

„ 77, line 5 from the top, *for* This the *read* This is the.

„ 81, bottom line, *crase and at the beginning of the line*.

„ 82, line 8 from top, *for* Aranæ *read* Aranæ.

„ 90, line 17 „ *after* Irel. *insert* p. 191, pl. xiv., fig.
122.

„ 90, bottom line, *after the word* process *add* at their base on
the outer side.

„ 99, line 2 from top, *after* very *insert* and.

„ 100, line 14 from the bottom, *for* largeish *read* largish.

*In binding the two parts of the work the binder must omit the *Errata et Corrigenda* of Part I., which is embodied in the present list.

ERRATA CONTINUED.

- „ 103, lines 18 and 19, *transpose the words metatarsi and tarsi.*
- Page 106, line 10 from top, *for serves read serve.*
- „ 111, line 13, „ *for This not read This is not.*
- „ 113, line 18, „ *for rehdish read reddish.*
- „ 120, line 6 from bottom, *after which insert is.*
- „ 122, line 15 from top, *for full stop after the word foregoing place a comma.*
- „ 123, line 14 from top, *erase full stop after Neriène.*
- „ 126, line 13 „ *at end of line, for the comma place a full stop.*
- „ 127, line 11 from bottom, *after with insert a.*
- „ 128, line 6 from top, *for largeish read largish.*
- „ 129, line 7 from bottom, *for fucipalpis read fuscipalpis.*
- „ 135, line 6 from top, *for larger read smaller.*
- „ 141, line 18 „ *for o read of.*
- „ 141, line 8 from bottom, *for thirty-eight read thirty-nine.*
- „ 144, line 11 from top, *for fonnd read found.*
- „ 150, line 18 „ *for occurs read occurs.*
- „ 152, line 7 „ *erase bracket after prominently.*
- „ 161, line 4 from bottom, *for inner read outer.*
- „ 161, line 5 „ *for outward read inner.*
- „ 161, line 6 „ *for outward read inward.*
- „ 177, line 6 „ *place a comma after square.*
- „ 178, line 6 „ *for forty-three read forty-eight.*
- „ 198, line 13 from top, *for flacipes read flavipes.*
- „ 204, line 17 „ *for n read on.*
- „ 213, line 11 „ *for femora read tibiæ.*
- „ 235, line 4 „ *for atomaria read tuberculata, and for p. 106 read p. 107.*
- „ 235, line 5 from top, *for fig. 1033 read fig. 1034, a.b.*
- „ 255, line 6 from bottom, *insert, as a synonym, after EPEIRA SIMILIS, Bl., &c., ZILLA CALOPHYLLA, C. L. Koch, Die Arachn., Bd. vi., p. 148, Tab. 216, fig. 538, 539.*
- „ 257, *Expunge from Synonyms of ZILLA ATRICA, C. L. Koch, Zilla calophylla, Ibid., which should be inserted instead as a synonym of the preceding species (Zilla x-notata, Olk.)*

ERRATA CONTINUED.

- „ 280, top line *for* diadimata *read* diademata.
- „ 314, line 4 from bottom, *add a semicolon after* Cambridgii.
- „ 412, line 10 from top, *for* male *read* same.
- „ 418, line 11 from bottom, *for* 85 *read* ser. 5.
- „ 419, line 4 „ *after* adheres *insert* so.
- „ 424, insert at the beginning of description of *Drassus minor*
Length of the adult female 2 lines.
- „ 464, line 16 from top, *for* consists *read* consist.
- „ 472, line 5 „ *for* years *read* months.
- „ 477, line 3 „ *for* Walckenäera *read* Walckenaer.
- „ 501, line 10 „ *erase* GENUS WALCKENAERA, *Blackw.*
- „ 517, line 16 „ *for* l.c. *insert* Spid. Great Brit. and
Irel.
- „ 524, top line, and also line 10 from top, *for* Clerk *read*
Clerck.
- „ 533, line 14 from top, *for* excavata *read* cavata.
- „ 535, line 5 „ *for* DEVONIENSIN *read* DEVONIENSIS,
and expunge sp. n. *adding as a synonymic reference* DIELA
DEVONIENSIS, Cambr., Ann. and Mag. N.II. 1879, s. 5,
vol. iv., p. 208.
- „ 545, line 8 from top *before* ALLODROMA *insert* LYCOSA.
- „ 568, line 13 from bottom, *for* regulosely *read* rugulosely.
- „ 568, bottom line, *for* hinde *read* hinder.
- „ 572, line 8 from top, *for* Silbicola *read* silvicola.
- „ 572, line 14 from bottom, *for* inadvertance *read* inadvert-
ence.
- „ 580, line 9 from top, *for* Degeerii *read* degener.
- „ 591, line 14 from bottom, *for* sternums *read* sternum.
- Explanation of Plate I., fig. 14, *for* pholangioides *read* phalan-
gioides.
- Explanation of Plate III., fig. 3, *for* reclusa *read* neglecta.

ADDENDA TO INDEX.

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<i>Coelotes moerens</i> , Cambr. 59
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<i>Dictyna viridissima</i> , Walek. 589
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<i>Euryopsis Blackwallii</i> , Cambr. 481
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<i>Lothia albispiraculis</i> , Cambr... 571
<i>Linyphia pholcommoides</i> , Cambr. 575
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<i>Pachydactylus pronus</i> , Menge.. 481
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<i>Singa sanguinea</i> , C. L. Koch.. 581
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<i>Theridion coracinum</i> , C. L. Koch 98
„ <i>flavomaculatum</i> , Bl. 100
„ <i>guttatum</i> , Wid. 99
„ <i>inornatum</i> , Cambr. 100
„ <i>instabile</i> , Cambr. 95
„ <i>lineatum</i> , Bl. 94
„ <i>quadripunctatum</i> , Bl. 96
„ <i>signatum</i> , Bl. 102
„ <i>stictum</i> , Cambr., Bl. 97

CORRIGENDUM.

NERIENE DECORA.

NERIENE DECORA, *Cambr.*, p. 492.

„ CAMPBELLII, *Ibid.*, p. 590.

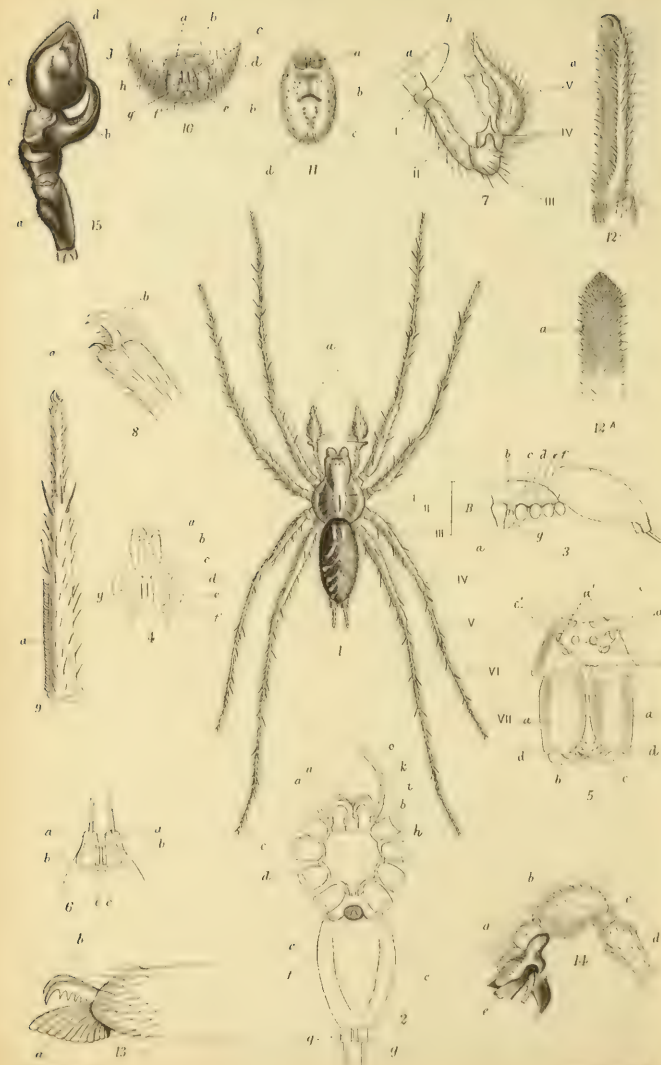
On the eve of publication I have ascertained beyond a doubt (but much to my surpriso) that the spider described as a new species (p. 590) is identical with *Nerienne decora*, *Cambr.*, p. 492.

O. P. CAMBRIDGE,

Bloxworth Rectory.

May 23, 1881.





EXPLANATION OF PLATES.

PLATE I.

Fig.

1. *Agelena labyrinthica*.—Adult male; full figure enlarged; *a*, palpi; i., exinguinal joint of leg; ii., coxal joint; iii., femoral joint; iv., genual joint; v., tibial joint; vi., metatarsal joint; vii., tarsal joint.
2. *Ditto*.—Adult female; Outline of underside, with legs and right palpus truncated; *a, a*, maxillæ; *c*, labium; *h*, axillary joint of palpus; *b*, humeral joint; *i*, cubital joint; *k*, radial joint; *o*, digital joint; *d*, sternum; *e, e*, openings of the ordinary spiracular organs; *f*, genital aperture; *g, g*, inferior pair of spinners.
3. *Ditto*.—Outline in profile, with legs and palpi truncated; *a*, one of the falces; *g*, one of the maxillæ; *b*, caput; *c, d, e, f*, soldered segments of thorax, corresponding on each side, with the number of legs, and their divisional lines, or indentations, and converging towards a central indentation (fig. 4 g.)
4. *Ditto*.—Outline of cephalo-thorax on upper side; *a*, falces; *b*, caput; *c, d, e, f*, soldered segments of thorax; *g*, thoracic indentation.
5. *Ditto*.—Outline of caput and falces from in front; *a, a*, falces; *b, c*, moveable fangs of falces; *d, d*, denticulations of falces; *c'*, facial space; *i, e*, space included between a line formed by the posterior eyes, and the fore margin of the caput, close to the falces; *a', a''*, ocular area; *b'*, clypeus.
6. *Ditto*.—Hinder extremity of abdomen, from beneath, showing *a, a*, superior spinners; *b, b*, inferior spinners; and *c, c*, central pair.
7. *Ditto*.—Palpus of male; *a*, maxilla; i., axillary joint; ii., humeral joint; iii., cubital; iv., radial; v., digital; *b*, palpal organs.

Fig.

8. *Ditto*.—Extremity of tarsus of one of the legs; *b*, superior terminal denticulated claws; *a*, inferior claw.
9. *Amaurobius similis*, Blackw., tarsal, and metatarsal joints of leg of fourth pair; *a*, series of curved spine-like bristles called the *calamistrum*.
10. *Ditto*.—Extremity of abdomen, from beneath and behind; *g,e*, superior pair of spinners; *d,h*, inferior pair; *c,j*, small central pair; *f*, anal tubercle and orifice; *a,b*, supernumerary spinning organs, always found in spiders furnished with the *Calamistrum*.
11. *Anypheana accentuata*, Walck.—Under side of abdomen; *a*, genital aperture; *b,b*, ordinary spiracular openings; *c*, extraordinary spiracular opening; *d*, spinners.
12. *Drassus lapidicolens*, Walck.—Tarsal joint of one of fore legs; *a*, closely set papillæ-form and other hairs, forming the "*Scopula*," in profile.
- 12A. *Ditto*.—*a*, Scopula from in front.
13. *Philodromus dispar*, Walck.—Extremity of tarsal joint of one of the legs in profile; *b*, two terminal claws; *a*, cluster of papillæ-form hairs or *claw-tuft*.
14. *Pholcus pholangioides*, Fuessl.—Palpus of male; *a*, digital joint; *b*, radial joint; *c*, cubital; *d*, humeral; *e*, palpal organs.
15. *Phrurolithus festivus*, Koch.—Palpus of male; *a*, tubercular prominence, or apophysis, on humeral joint; *b*, radial apophysis, or projection issuing from radial joint; *d*, digital joint; *e*, palpal organs.

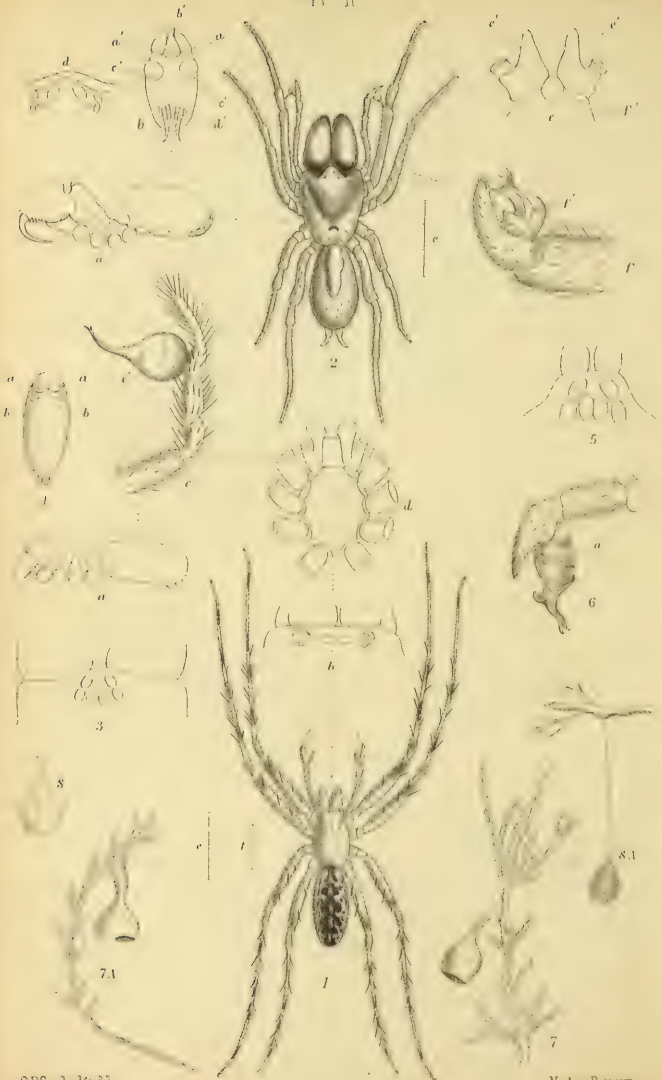


PLATE II.

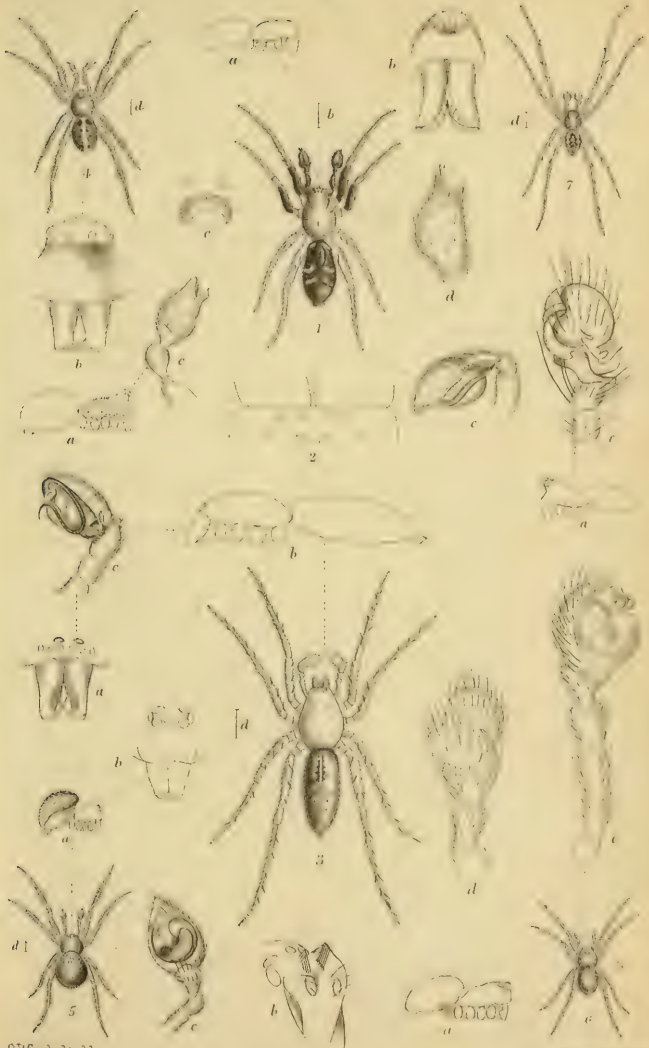
Fig.

1. *Segestria Bavarica*, C. Koch.—Full figure magnified; *a*, outline in profile, with legs and palpi truncated; *b*, fore extremity of caput, showing the eyes; *c*, palpus; *c'*, palpal organs of ditto; *d*, under side of cephalo-thorax, with legs and palpi cut off, showing the *maxillæ*, *labium*, and *sternum*; *e*, natural length of female spider; *f*, ditto of male.
2. *Atypus piceus*, Sulz.—Full figure magnified; *a*, profile outline, without legs or palpi; *b*, under side of abdomen; *b'* genital aperture; *a', a'*, ordinary spiracular openings; *c', c'*, second pair of ditto, (belonging to family *Theraphosides*); *d*, eyes from above and behind; *e*, natural length of spider; *f*, digital, and part of radial joint of palpus; *f'*, palpal organs; *e*, fore part of sternum; *e', e'*, *maxillæ*; *f'*, *labium*.
3. *Dysdera Cambridgii*, Thor.—Fore part of caput, showing the eyes from above and behind.
4. *Ditto*.—Under side of abdomen; *a, a*, ordinary spiracular openings; *b, b*, second pair of ditto, (belonging to family *Dysderides*.)
5. *Oonops pulcher*, Templeton.—Fore part of caput, showing the eyes from above and behind.
6. *Dysdera erocota*, C. Koch.—Portion of palpus of male; *a*, palpal organs.
7. Egg cocoon of *Agroëca proxima*, Cambr., attached to a twig of heather.
- 7A. Egg cocoon of *Agroëca brunnea*, Bl. ?
8. Egg cocoon of *Theridion pallens*, Bl., enlarged.
- 8A. Egg cocoon of *Ero thoracica*, C. Koch, attached to a dead twig, and a little enlarged.

PLATE III.

Fig.

1. *Drassus bulbifer*, Cambr.—*a*, Profile without legs or palpi ; *b*, natural length of spider ; *c*, external orifice of seminal vessels ; *d*, humeral joint of palpus ; *e*, digital, radial, and cubital joints, showing palpal organs and the radial apophysis.
2. *Drassus lapidicolens*, Walck.—Eyes from above and behind.
3. *Clubiona reclusa*, Cambr. —*a*, eyes and falces from in front ; *b*, profile outline ; *c*, palpus ; *d*, natural length of spider.
4. *Steatoda sticta*, Cambr., — *a*, profile outline ; *b*, fore part of caput, showing the eyes and falces ; *c*, palpus ; *d*, natural length of spider.
5. *Pholcomma gibbum*, Westr.—*a*, profile ; *b*, fore-part of caput, showing eyes and falces ; *d*, natural length of spider.
6. *Walckenaëra diceros*, Cambr.—*a*, profile outline ; *b*, fore part of caput from above and rather behind, greatly magnified, showing position of the eyes, and the two horn-like tufts of bristles in the middle of the ocular area ; *c*, palpus from above ; *d*, ditto, underneath ; *e*, natural length of spider.
7. *Linyphia setosa*, Cambr. —*a*, profile outline ; *b*, caput in front, showing eyes and falces ; *c*, palpus from above ; *d*, natural length of spider.



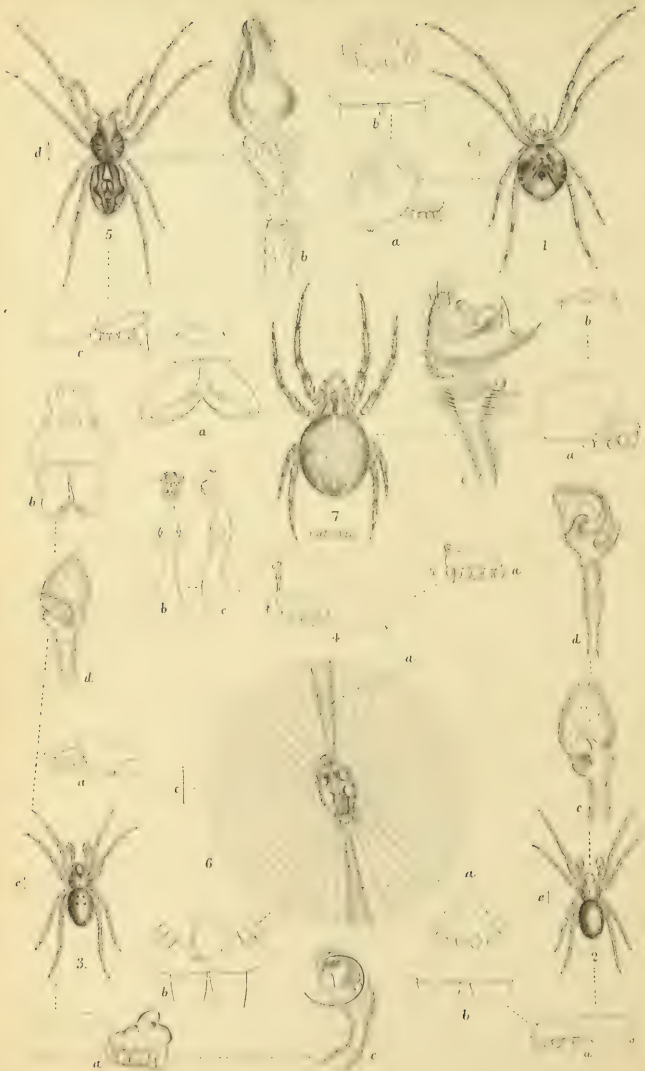


PLATE IV.

Fig.

1. *Theridion formosum*, Clerck.—Enlarged; *a*, profile outline; *b*, eyes from in front; *c*, natural length of spider.
2. *Nerience fugax*, Cambr.—Enlarged; *a*, profile outline; *b*, eyes from in front; *c*, palpus; *d*, ditto from another point of view; *e*, natural length of spider.
3. *Walckenaëra trifrons*, Cambr.—Enlarged; *a*, profile outline; *b*, eyes and falces from in front; *c*, palpus; *d*, ditto in another position; *e*, natural length of spider.
4. *Walckenaëra acuminata*, Blackw.—Profile outline, without legs or palpi; *a*, profile outline of cephalo-thorax; *b*, front view of cephalic eminence, greatly magnified, showing position of eyes; *c*, profile of ditto.
5. *Pachygnatha Degeerii*, Sund.—Enlarged; *a*, front view of eyes and falces; *b*, palpus; *c*, profile outline, without legs or palpi; *d*, natural length of spider.
6. *Cyclosa conica*, Pall.—In snare; *a, a*, adhesive flocculus attached to radiating lines of snare, presumably to aid in the entanglement of insects, with the débris of which it is usually loaded.
7. *Epeira quadrata*, Clerck.—Natural size; *a*, profile outline without legs or palpi; *b*, eyes from behind; *c*, palpus of male.

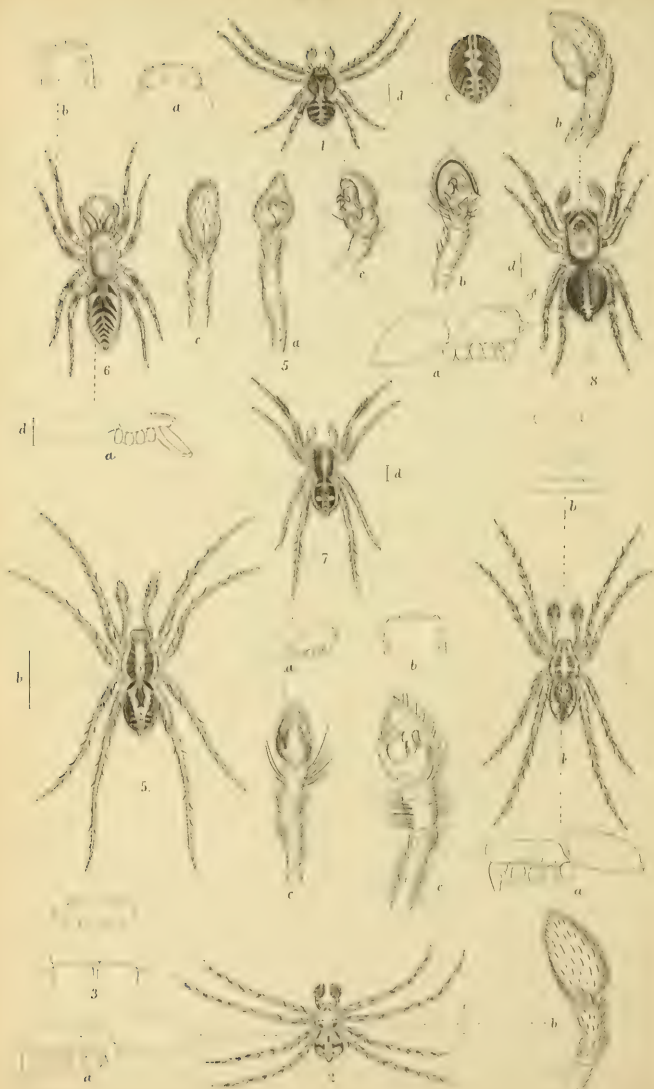


PLATE V.

Fig.

1. *Xysticus lanio*, C. L. Koch.—Enlarged; *a*, eyes from behind; *b, c*, palpus in two positions; *d*, natural length of spider.
2. *Philodromus margaritatus*, Clerck.—Var., *jejunos*, Panz.; *a*, profile outline, without legs or palpi; *b*, palpus; natural length of spider, indicated by line, unlettered.
3. *Philodromus*, sp. ?—Eyes from in front.
4. *Lycosa herbigrada*, Black.—Enlarged; *a*, profile outline, without legs or palpi; *b*, eyes from in front; *c*, palpus; natural length of spider, shown by line unlettered.
5. *Tarentula fabrilis*, Clerck.—Enlarged; *b*, natural length of Spider.
- 5A. Palpus of *Tarentula fabrilis*.
6. *Epiblemum cingulatum*, Panz.—Enlarged; *a*, profile outline, without legs or palpi; *b*, eyes from behind; *c*, palpus; *d*, natural length of spider.
7. *Attus saltator*, Sim.—Enlarged; *a*, profile outline, without legs or palpi; *b*, eyes from behind; *c*, palpus; *d*, natural length of spider.
8. *Ælurops V-insignitus*, Clerck.—Enlarged; *a*, profile outline, without legs or palpi; *b*, palpus; *c*, abdomen of female, showing difference of pattern from that of male; *d*, natural length of spider.

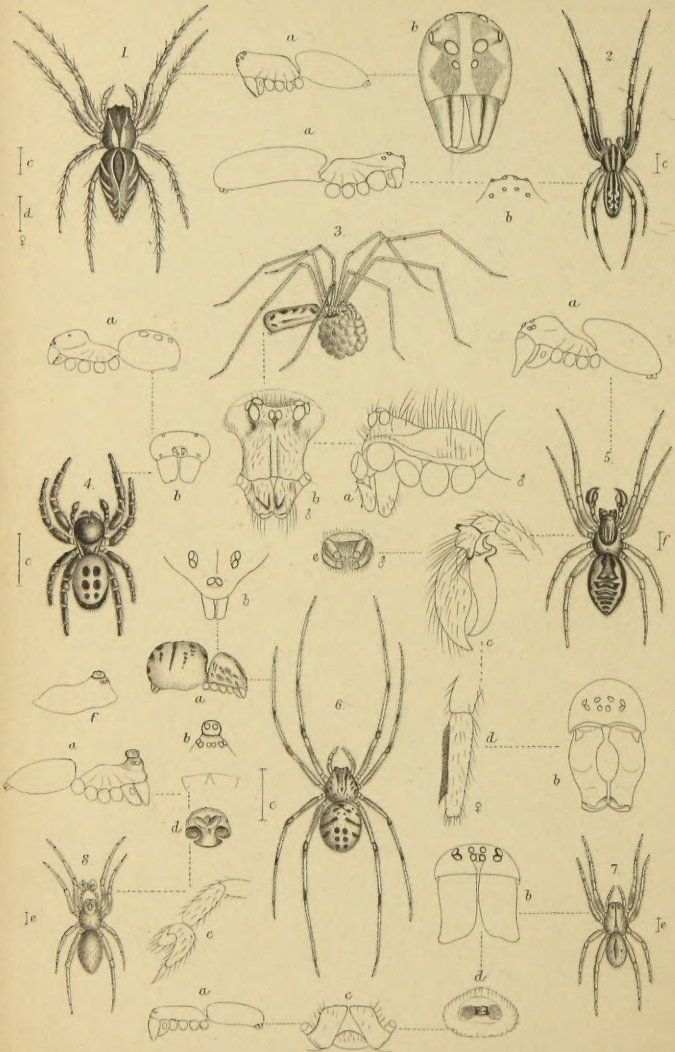


PLATE VI.

Fig.

1. *Oxyopes lineatus*, Latr.—Immature female enlarged; *a*, profile, without legs or palpi; *b*, caput and falces from in front, showing the position of the eyes; *c*, length of the immature female figured; *d*, length of adult female.
2. *Uloborus Walckenaërius*, Latr.—Adult male enlarged; *a*, profile, without legs or palpi; *b*, ocular area from above and behind; *c*, natural length of spider.
3. **Pholeus phalangioides*, Fuessl.—Adult female natural size, carrying her ball of eggs; *a*, profile of cephalo-thorax; *b*, caput and falces from in front, showing the position of the eyes; *c*, natural length of spider.
4. *Eresus cinnaberinus*, Oliv.—Adult male magnified; *a*, profile, without legs or palpi; *b*, front view of caput and falces, showing the position of the eyes; *c*, natural length of spider.
5. *Dictyna arundinacea*, Linn.—Adult male enlarged; *a*, profile, without legs or palpi; *b*, front view of caput and falces, showing the position of the eyes; *c*, palpus of male on outer side; *d*, portion of leg of fourth pair of female, showing calamistrum on the metatarsus; *e*, spinners of male, showing the transverse supernumerary spinning organ in front of the ordinary ones; *f*, natural length of spider.
6. *Scytodes thoracica*, Latr.—Adult female enlarged; *a*, profile, without legs or palpi; *b*, caput and falces from in front, showing the position of the eyes; *c*, natural length of spider.
7. *Robertus astutus*, Cambr.—Adult female magnified; *a*, profile, without legs or palpi; *b*, caput and falces from in front, showing the position of the eyes; *c*, maxillæ and labium; *d*, genital aperture; *e*, natural length of spider.
8. *Walckenaëra jucundissima*, Cambr., sp.n.—Adult male enlarged; *a*, profile, without legs or palpi; *b*, front view of caput and falces; *c*, portion of palpus from inner side, showing (specially) the form of the radial apophysis; *d*, genital aperture of female; *e*, natural length of adult male; *f*, *Walckenaëra nodosa*, Cambr., profile of caput of adult male, showing the difference of form from that of *Walckenaëra jucundissima* (fig. *a*).

*The original drawing from which this figure is engraved was drawn by the author for Mr. Blackwall's work on British and Irish Spiders, pl. xv., fig. 137a.

